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A MONOGRAPH OF *CHARAXES* AND THE ALLIED PRIONOPTEROUS GENERA.

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(Continued from Vol. VI. p. 286.)

(Plates VI., VII., VIII., XI., XII.)

GENUS *CHARAXES*.

- Papilio Eques Achivus* Linné, *Syst. Nat.* ed. XII. p. 748 (1767) (partim; typus: *P. E. A. helena*); Drury, *Illustr. Exot. Ins.* I. index (1770); Cramer, *Pap. Exot.* I. p. 5 (1775); Fabr., *Syst. Ent.* p. 449 (1775); Goeze, *Ent. Beytr.* III. I. p. 50 (1779); Fabr., *Mant. Ins.* II. p. 6 (1788); Gmel., *Syst. Nat.* I. 5. p. 2234 (1790).
- Papilio Nymphalis Gemmatus*, Goeze (non Linné, 1758), *l.c.* p. 288 (1779).
- Papilio Nymphalis Phaleratus*, Gmelin, *l.c.* p. 2312 (1790).
- Papilio Nymphalis*, Fabricius, *Ent. Syst.* III. 1. p. 61 (1793).
- Papilio*, Donovan (non Linné, 1758), *Ins. of China* t. 35 (1798).
- Nymphalis*, Latreille (non Linné, 1758), *Hist. Nat. Crust. Ins.* XIV. p. 82 (1805) (typus: *P. E. A. jason* L.); Godart, *Enc. Méth.* IX. p. 350 (1823) (partim); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 306 (1850); Kirby, *Cat. Diurn. Lep.* p. 267 (1871).
- Paphia* Fabricius (non Bolt., 1798), in Illig., *Mogaz. Ins.* VI. p. 282 (1807) (partim; typus: *P. E. A. jason* L.).
- Charaxes* Ochsenheimer, *Schmett. Eur.* IV. p. 18 (1816) (typus: *P. E. A. jason* L.); Thon, *Naturgesch. Schm.* p. 72 (1837); Feld., *Nova Act. Ac. Car. Nat. Cur.* XXVIII. 3. p. 39 (1861); Butl., *Proc. Zool. Soc. Lond.* p. 622 (1865) (Monograph); Schatz, *Fam. & Gatt. Tagf.* p. 175 (1888); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 173 (1893) (*Palla* = *Charaxes* ex err.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 348 (1896) (partim, Revision); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 221 (1899) (partim; Afric. spec.).
- Tigridia* Hübner, *Verz. Schmett.* p. 40 (1816-27) (partim; typus: *P. N. Ph. acesta* L.).
- Eriboea* id., *l.c.* p. 47 (1816-27) (partim; typus: *P. E. A. brutus* Cram.).
- Coea* id., *l.c.* p. 48 (1816-27) (partim; typus: *P. E. A. varanes* Cram.).
- Dococapa* id., *l.c.* p. 49 (1816-27) (partim; typus: *P. N. Ph. erminea* Cram.).
- Polyura* Billberg, *Enum. Ins.* p. 79 (1820) (partim; typus: *P. E. A. jason* L.).
- Satyrus*, Godart (non Latreille, 1810), *l.c.* p. 477 (1823) (partim).
- Apatura*, Boisduval (non Fabricius, 1807), *Ind. Méth.* p. 14 (1829) (partim).
- Jasia* Swainson, *Zool. Illustr.* II. 2. p. 90 (1831-32) (partim; typus: *P. E. A. jason* L.).
- Phyllophasis* Blanchard, *Hist. Nat. Ins.* III. p. 447 (1840) (partim; typus: *P. D. F. galanthis* Cram.).
- Philognoma* Doubleday, Westw. & Hew., *l.c.* p. 310 (1850) (partim; typus: *P. E. A. decius* Cram.).
- Palla*, Kirby (non Hübner, 1816-27), *Cat. Diurn. Lep.* p. 273 (1871) (partim).
- Monura* Mabille, *Bull. Soc. Zool. Fr.* I. p. 280 (1876) (typus: *P. N. Ph. zingha* Cram.).
- Haridra* Moore, *Lep. of Ceylon* I. p. 30 (1880) (typus; *Ch. psaphon* Westw.); id., *Lep. Ind.* II. p. 229 (1895).
- Charaxes* (*Haridra*), Wood-Mason & Nicév., *Journ. As. Soc. Beng.* LV. 2. p. 363 (1886).
- Palla* (*Charaxes*), Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893).

Differs from *Eulepis* in both sexes in the cell of the hindwing being open.

The egg of *Ch. jason* became known and was described and figured at the end of the eighteenth century. No other *Charaxes* eggs were compared till Doherty

took up the study of the butterfly eggs, and published some short but highly important notes on them in 1886. Doherty says of the egg of the "*Charaxinae*" (*Journ. As. Soc. Beng.* LV. 2. p. 109): "Eggs large, few, globular, hard, not so high as broad, with obscure ribs and cross-lines at the base only, forming (usually) tetragons, with minute projecting points at their intersection." For "base" should be read "apex." We have examined the eggs of a number of species, taken from the bodies of dry specimens. Apart from size, there is no apparent difference in the eggs of the various species. The micropyle end is flattened, slightly concave, with the centre raised; from the centre radiate slight ribs, which gradually disappear at the sides and do not reach the base or underside; the longitudinal ribs are connected by extremely feeble transverse ridges, and bear, as Doherty correctly points out, small projecting points, which are easily visible under a good lens.

The slug-shaped **caterpillar** is widest in or before the middle, narrowed behind, and has a finely granulated skin. The head is flat, prognathous, and bears four processes which point backwards and are rough with tubercles, as is the hinder edge of the head between the processes; cheeks also tuberculated; the anal segment bears dorsally two more or less prominent processes, which are longer in the young larva than in the full-grown one. The colour of the larvae is generally green, often yellowish, the head bears, on each side, a light line which runs along the outer horn, and there is a spot on one or more abdominal segments, the colour of these latter markings, which are mostly more or less half-moon-shaped, is as a rule buffish, the spots having often a darker (reddish or bluish) border. The caterpillar is a very slow creature, which does not voluntarily leave the twig on a leaf of which the egg was deposited. Of *Ch. jason* it is known that the larva makes on the surface of the leaf on which it feeds a kind of web which serves for a foot-hold. The larva is known of *Ch. polyxena*, *psaphon*, *fabi*, *etheocles*, *brutus*, *varans*, *cithaeron jason*. The thick **chrysalis** is bright green as a rule, very smooth and shining, dorsally very convex; head bluntly bipartite; end of abdomen with two rounded tubercles ventrally.

The **imago** of most species is robust, and has a powerful flight. The antenna is gradually thickened to a club; the last four segments are much shorter dorsally than ventrally, the tip of the club appears, therefore, when looked at from the side, rounded ventrally. The number of segments varies in the different species from 44 to 56, and is also individually not quite constant. The last 15 to 18 segments are broader than long, the preceding ones longer than broad, and the proximal segments again broader than long. The three ventral carinae are prominent; the deep grooves between them extend from the base to the apex of each segment, the proximal ones excepted. The sensory hairs are dispersed over the groove, but are more dense in the middle of each groove, forming here a rounded or oblong patch. The basal pair of setae, characteristic of the *Nymphalidae* (see Nov. Zool. V. p. 390), is well developed, as is also the lateral pair, which stands in the middle of the segment dorsally of the lateral carinae. The scaling is not dense, but reaches to the last but fourth segment; the scales are small and elongate, mostly black, those of the internal (or anterior) side rarely white (*varans*).

The palpi reach well above the head and protrude forward, being somewhat S-shaped; they are longest in *eandiope*. The scaling is smooth ventro-laterally and does not show any interspersed long hairs, while the scales of the ventral edge and of the free part of the dorsal side are long, forming a kind of crest, the dorsal crest produced into a tuft which is contiguous to the eye; second segment two

or three times as long as the first; third generally pointed, seldom (*neanthes*) compressed and subtruncate.

Genital armature of ♂ with penis-funnel, the opening of which extends at least to the middle. The differences between the species in the various parts of the armature is generally very slight, but occasionally considerable. There is a great variety in the denticulations of the penis-sheath; if there is a series of teeth the most distal one is dorsal or nearly dorsal, while the series turns proximally towards the left side in most cases, the most proximal teeth being often ventro-lateral.

Legs: see Nov. Zool. V. p. 558.

There is a great diversity in the shape of the outline of the wings of *Charaxes*. The outer margin of the forewing varies from being nearly straight to being deeply concave, the most prominent point lying either between SC^4 and SC^5 , or at SC^5 , and is sometimes produced into a more or less acute angle at SC^5 . The hindwing is abnormally always somewhat, often considerably, longer than costally, and has in most species a triangular form. The strength of the dentition of the distal (or outer) margin of both wings varies much according to species and groups of species, and is also not quite constant within the species. The teeth at veins R^3 and M^2 of the hindwing are mostly produced into tails of various length, which may be pointed, rounded, or dilated at the tips. The upper tail, or, in other forms, the lower one, is not seldom wanting, either in one or both sexes, and there are also species without tails, while in others tooth M^1 is prolonged to a third tail. The anal angle is in many species more produced than the outer margin between the tails, which character is exaggerated in *Ch. zingha*.

There is nothing in the scaling—apart from the basal patch on the underside of the forewing—of the wings by which *Charaxes* is distinguished from the allied genera. As in other Butterflies (and Moths) the anterior half of the upperside of the hindwing and the basal and posterior half (or more) of the underside of the forewing are covered with scales of which those of the upper layer have the distal edge entire, not dentate. These parts of the wings are practically those that are covered when the Butterfly is at rest with the wings closed above the back. The extent of the areas with non-dentate upper scales is variable. As a rule, the upperside of the forewing has dentate scaling only, but there are species (*etheocles* ♂, *ameliae* ♂, etc.) in which the scales, at least of the upper layer, are more or less non-dentate on the forewing; and occasionally nearly the whole upperside of the hindwing, not only the anterior half, is covered with non-dentate scaling (*etheocles* ♂). Metallic scales are in Butterflies as a rule non-dentate. This does not hold good among *Charaxes*. While in a few species (*mycerina*, etc.) the light blue spots of the forewing above are composed of non-dentate scales, they consist of dentate ones in many other species (*tiridates*, etc.). The metallic basal area of the forewing found in many *Charaxes* (*tiridates*, *etesipe*, etc.) consists of sharply toothed scales. A rather great variety in size and outline of the scales is observed in the cell on the upperside of the forewing. Here we meet in one species with very long and very narrow scales (*eupale*); in others with sharply dentate scales and many hairs (*varanes*, etc.); in others again with long-toothed scales which are larger than the scales on the disc (*castor*, etc.); while in some species the scales in the cell and on the disc are not essentially different (*neanthes*).

The wing membrane is in many species, especially the tawny African ones, more or less green, as are here also the veins. The latter are accompanied, especially on the underside, by dispersed, long hairs.

The neururation exhibits some variation in several points. The length of cell of the forewing is not constant in the genus, three being species in which the distance from the lower angle of the cell to the base is greater than that to the end of R^3 (*castor*, etc.); while in other *Charaxes* the reverse is the case (*Ch. polyxena*, for instance). Vein R^3 of the forewing varies in position specifically and individually, joining R^3 sometimes near the point of origin of M^1 , sometimes 5 or more mm. distally of it. M^2 of the forewing stands generally about midway between M^1 and the base of M , but in many species it is considerably nearer M^1 : The praecostal veinlet of the hindwing is often two-branched (*varanes*, *candiope*, etc.), sending a more or less long spur basad, whereas in most species it is simply curved distad, being, however, thickened at the bent as a rule. The distance between SC^2 , R^1 and D^3 of the hindwing is also not constant in the genus, and varies even individually; on the whole, R^1 is midway between SC^2 and D^3 . As explained in vol. V., p. 557. D^3 of the hindwing reaches M either at the point of origin of M^1 (or near it), or is more proximal; there is some individual variability in this respect, but the more obvious differences are found in the sexes or in different species.

While in *Eulepis* the sexes do not differ very greatly, except in *epigenes* from the Solomon Islands, sexual dimorphism is among *Charaxes* a much commoner phenomenon than similarity of the sexes in colour and shape. The wings of the ♀ are always broader than those of the ♂, and the hindwing is, as a rule, less triangular; the tails are broader, often widened at the end; in some species the ♂ has one, the ♀ two tails, in other the tails of the ♂ are obliterated, while the ♀ possesses such an appendage.

The pattern of the upperside is often very different in the sexes and in the various species. The ♀♀ can be arranged according to the pattern of the upperside of the forewing into four groups:

(1) The discal and postdiscal interstices form a forked band, which is generally more or less interrupted at the veins into spots or patches. This is the normal type of ♀. There are many species in which the ♂ has a similar band, but in this sex the patches composing the band are smaller than in the ♀.

(2) The upper discal interstitial patches become small or obsolete, while the postdiscal ones form together with the posterior discal ones an oblique band which extends from the costal to the internal margins. This type is found in both sexes of a number of species, and in the ♂♂ only of some others.

(3) The upper postdiscal interstitial spots are reduced in size or absent, while the discal interspaces and the posterior postdiscal ones form a broad curved band. This type does not occur in the ♂-sex.

(4) The band is similar in appearance to that of type (3), but it is composed of the posterior postdiscal and discal interstices and the upper median ones, the band often entering the cell. This type is also confined to the ♀-sex, and is met with only in one polychromatic species 1, *ethocles*, of which other specimens belong to type (1).

It is worthy of note that though types (2) to (4) are doubtless derivations from type (1), the middle and upper discal interstitial patches are enlarged in type (3) and reduced in type (2), while the reverse is the case in regard to the upper and middle postdiscal spots. The same elements in the pattern of the wing follow here, in the same genus, opposite directions of development, a phenomenon which we meet with commonly among Lepidoptera. It is obvious that the divergency of the lines of development of such closely allied species is not explained by assuming that

the elements in the pattern develop phylogenetically according to a fixed "law." The phenomenon shows, on the contrary, that some agency foreign to the allied insects decides which of the many possible lines of development an element (dot, line, spot, patch, band, streak) of the pattern must follow.

The variability in the pattern—apart from "sports"—is in some species rather slight, relating only to minute differences in the size of the spots, the relative positions of the bars and general tint of the wings, while in others the individual differences are so great that some authors have considered them specific. In *Ch. polyxena*, for instance, both sexes are so extremely variable that ten odd specific names have been bestowed upon individuals from North India and Burma alone. The occurrence of very different individuals in the same locality may sometimes be due to meteorological factors acting upon the individual chrysalis. But we have no evidence of that in regard to *Charaxes*. Nor is there any evidence that the cases of variability put down by Butler as seasonal variation, and those queried as such by Moore and Aurivillius, are really seasonal. In many instances we have found that individuals belonging to two supposed seasonal forms occur together at the same time of the year, the one form not being apparently more plentiful than the other. Only such varieties should be called seasonal of which it is shown that they are seasonal. Considering differences of undated specimens as seasonal is unjustifiable—because arbitrary—as is treating those of not-localised individuals as geographical. The only suggestion we can here make as to seasonal variation among *Charaxes* is based on dated specimens of *Ch. polyxena* from North India; these specimens show that the individuals emerging from hibernated pupae are rather smaller than the average summer specimens.

We recognise 103 distinct species, of which 30 are divided into 90 subspecies (=geographical forms). To classify such a great number of species of a genus satisfactorily is not an easy matter. Though the relationship of any two species may be recognised with certainty, it remains often a purely arbitrary matter in which order the groups of species have to follow one another in the linear arrangement of a list. We have as guides in the classification of *Charaxes* some structural characters, such as the dentition of the costal margin and the length of the cell of the forewing, the sexual armature of the ♂, and the pattern. Of these characters, those of the sexual organs can be employed only with great caution.

These organs exhibit often but very slight differences in closely related species, and hence sometimes give important hints as to the relationship of species, if there are any special structures observed; but we must keep in mind that similarity in the penis or clasper does not necessarily indicate relationship, as the similarity may be the outcome of the obliteration of the different special structures. In this category of unreliable characters belongs, for instance, the occasional absence of denticulation from the penis. On the whole, there are few structural characters available in the classification of *Charaxes*, for the simple reason that the constant structural differences of groups of species, relating to both sexes, are employed to characterise genera. The species dealt with in this monograph being divided up into genera according to the structure of the body and wings, it is not possible to further divide these genera on purely structural characters. The colouration of the wings must, therefore, remain one of the chief guides in the arrangement of the species. But here again one must take care not to be misled by analogies, which are not rare among *Charaxes* as regards the phyletically younger pattern of the upperside of the wing. There is a whole series of species which bear on the upperside a remarkable

resemblance to other species of *Charaxes* with which they are not nearly related (*hildebrandti* and *brutus*, *anticlea* and *protoclea*, *guderiana* ♀ and *pelias*, various forms of *etheocles* ♀ and *bohemani*, *numenes* ♀, *cithaeron* ♀, etc.), and it is of great significance] that all these "mimetic" species can be grouped together on account of the agreement in the number of denticulations of the costal margin of the forewing with the number of scale-rows (see vol. V. p. 551). It is no less interesting that into this same group come also the peculiar acraeoid *zingha*, the *Argynnis*-like *jahlusa*, the green *eupale*, and *paphianus*, *mycerina* and allies with the leaf-like underside. Many of these species show, moreover, striking affinities in the pattern of the underside.

Another group is formed by the allies of *Ch. polyxena*, *varanes*, *candiope*, which have preserved, on the upperside, a more ancestral pattern than the other *Charaxes*, and may, for this reason, be put at the beginning of the series. Into a third natural group come the allies of *Ch. tiridates* in which the median bars SC^3-R^2 of the forewing below have left their normal place at one-third or one-fourth the way from the cell to the apex of the wing, having wandered proximad to near the cell; a transition to this group is found in *Ch. imperialis* and *ameliae* which have retained the normal position of those bars. A fourth group unites all the "typical" *Charaxes*, allied to *jason*, with heavy bars on the underside and black and white, or brown, lines upon the abdominal fold.

The greater proportion of the species is African (80), one occurs in the Mediterranean countries and 22 in the Indo-Australian region. The Mediterranean species (*jason*), as well as one of the Indo-Malayan *Charaxes* (*fabi*) are of an African type, while the other eastern species have a near relative in the African *Ch. varanes*. Australia is not known to be inhabited by a species of this genus, while there occurs a form of *Eulepis*, a genus confined to the Indo-Australian region. New Guinea and the Bismarck Archipelago have one species, the Solomon Islands are without *Charaxes*, but the New Guinea species may be expected to be discovered there some day. On each of the Moluccan Islands one species only is found, with the exception of Buru, where two species have been obtained. Celebes has four, Sumatra five, Burma seven, Sikkim five, South India two, Java three, and the lesser Sunda Islands one each; from Borneo four species are known; Palawan has five species, while each of the Philippine Islands seems to be inhabited by three only; in China there is one species, which goes as far north as Shanghai.

The most striking features in the **habits** of *Charaxes* are the rapid flight, the partiality to putrid matter, and the constancy with which a specimen returns to the same spot. Few species are found in the open country (*Ch. pelias pelias*, *jason*, *fabi*), where there are only bushes and rarely trees; most species inhabit the more wooded country, and some are found only in and near larger forests. The *males* come often in some numbers to water pools on roads; both sexes are fond of the juice of trees, of decaying fruits, dung of animals, putrid meat, and can successfully be entrapped by the use of such baits; one is known to come to flowers (*zoolina*).

1. *Underside*: discal bars of forewing and discal and postdiscal ones of hindwing arched; subbasal and submedian lines of bars of hindwing thin, reaching SM^3 (or SM^1); median bars SC^4-R^2 of forewing much more distal than R^2-R^3 ; or, if discal bars not clearly marked, median bar SC^4-SC^5 much more distal again than bars SC^5-R^2 .

A. Forewing below normally scaled between C and costal edge.

a. Discal line of bars of hindwing below moderately biconcave, no regular, sharply defined, pale buff, postdisco-submarginal ring between C and SC².

a¹. Median bars SC⁴—R² of forewing below more or less continuous.

a². ♀, forewing above more or less mummy brown, basal area brighter, with creamy white halfmoons on disc; ♂ similar to ♀, or with basal half or two-thirds creamy olive buff.

a³. ♂ similar to ♀.

1. *Charaxes durnfordi* (Nov. Zool. VII. t. 6. f. 1 to 5).

Charaxes durnfordi Distant, Entom. XVII. p. 191 (1884) (Sunjei Ujong, Mal. Pen.).

♂ ♀. *Body above* varying in the different subspecies from tawny chestnut to cinnamon, paler in ♀ than in ♂, thorax somewhat greenish olive; *underside* whitish creamy buff, sides of sterna somewhat darker.

♂. *Wings above* of the colour of the body, forewing somewhat darker than the hindwing; this colour extends on forewing to near apex of cell and white discal spots, and shades into the blackish brown colour of the rest of the wing.—*Forewing*: black median bars very obscurely marked as black clouds or suffused patches, with white spots at their outer side, these more or less halfmoon- or angle-shaped, spot R²—R³ mostly small, spots M²—SM² resembling together the letter M; a series of postdiscal spots white; these become gradually smaller costad, the posterior ones are also halfmoon- or angle-shaped, the submedian ones fused to a M, at internal margin there is mostly a white postdiscal and sometimes also a discal patch; admarginal interspaces occupied by white spots situated upon the internervular folds, the submedian ones sometimes fused to a rather large patch, the others always small, no dot between SC⁴ and SC⁵, mostly also dots SC⁵—R² absent, seldom all obliterated.—*Hindwing*: discal bars more or less heavily marked, mostly halfmoon-shaped; they form the proximal border of a milky, or creamy, white band which consists of the postdiscal and admarginal interspaces and includes the ovate or circular black, postdisco-submarginal patches with white centres, in one form also the discal interspaces white, in which nearly half the wing is occupied by that colour, the white area narrowed at abdominal margin; median bars at least vestigial except last ones; admarginal line curved between veins, reaching extremities of veins, but separated between veins from edge of wing by white marginal spots.

Underside dirty creamy white; median interspaces of fore- and hindwing, except a small spot at outer side of dilated portion of bar D of forewing, more or less drab colour, paler on hindwing than on forewing; submedian interspace of cell of forewing and submedian interspaces of hindwing generally also somewhat drab; discal luniform bars of both wings very thin, not prominent.—*Forewing*: basal cell-spot heavy, the three cell-bars angled in middle; bar D heavy; submedian bar M¹—M² more distal than usual, touching M² 6 to 8 mm. from point of origin of that vein, much more distal than submedian bar M²—SM²; submedian bar R³—M¹ present, short, oblique, almost longitudinal; median bars R³—SM² almost continuous, bar R³—M¹ generally a little more distal than the others, about 10 mm. from base of M¹; median bar R²—R³ more proximal than the other median bars, but at least 5 mm. from cell at R³, median bar R¹—R² on a level with bar R³—M¹, about 9 mm. from cell, forming an obtuse angle with bar SC⁵—R¹; postdiscal bars represented

by ill-defined brown patches with a more distinct dot upon internervular fold, these dots somewhat closer to discal luniform bars than to outer margin of wing; discal interspaces often rather whitish at median bars.—Hindwing: bar D heavy and prominent; cell-bar 4 reaching M beyond origin of M^2 ; subbasal and submedian series of bars continued to SM^3 ; median bar R^3 — M^1 more distal than the two bars near it, 3 to 4 mm. from base of M^1 ; postdiscal bars thin, more or less regularly arched; white submarginal dots vestigial or absent, black dots not very prominent, upper two mostly absent, admarginal brown line faint; upper tail short, triangular, 2 to 4 mm. long, second a very short tooth.

♀. Similar to ♂, but larger, paler, the white markings of the forewing mostly more extended; tail 6 to 8 mm. long, less pointed than in ♂, very faintly spatulate.

Length of forewing: ♂, 44—52 mm.

” ” ” ♀, 50—57 mm.

Tenth tergite of abdomen deeply sinuate, the two processes long and slender; penis-funnel long; penis denticulate along the upper edge, the teeth prominent, standing in an irregular row which is sometimes double before end; extreme tip of penis without teeth, slightly curved towards the left.

Hab. From Burma to Java and Borneo; rare, a forest species. The geographical races of this species from Java, Borneo, Malacca, Sumatra, and from Tenasserim-Burma are so conspicuously different that in 1893 I thought myself justified in treating them as distinct species. But we find now, on examination of a larger material, that the distinguishing characters of these geographical representatives are not so constant as I at first considered them to be.

a. Ch. durnfordi nicholi (Nov. Zool. VII. t. 6. f. 1).

♂. *Nymphalis nicholi* Grose Smith, *Ann. Mag. N. H.* (5). XVIII. p. 150 (1886) (Burmah). *Charaxes nicholi* id. & Kirby, *Rhop. Exot.* I. *Char.* t. 2. f. 1. 2 (1887); Nicéev., *Journ. Bombay N. H. Soc.* XII. p. 330. n. 12 (1899) (Dawnat Range, March).

♂. *Charaxes durnfordi* Elwes, *Proc. Zool. Soc. Lond.* p. 284 (1891) (Karen Hills); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 389. n. 111 (1896) (*synon. p. parte*; E. Pegu).

♂. *Haridra nicholi*, Moore, *Lep. Ind.* II. p. 246. t. 182. f. 2. (1896) (E. Pegu).

♂. *Wings above.*—Forewing: chestnut-colour, reaching just to base of M^1 ; no white dots near upper angle of cell; discal markings M^2 — SM^2 fused together forming a sharply pointed M, spots SC^4 — M^2 angle-shaped, rather thin, spot R^2 — R^3 sometimes absent; postdiscal markings R^3 — SM^2 very much heavier; discal and postdiscal patches at internal margin fused; admarginal spots between veins obvious, last two separate.—Hindwing: interspaces between median and discal luniform bars creamy white, the discal series of luniform bars marked, especially between C and R^3 , or scarcely vestigial; area in front of cell from near base of R^1 to median bars blackish brown; median bars C— R^1 deeply arched; postdisco-submarginal black patches small, the second the largest, diameter of patches R^2 — M^2 only 3 mm., patches R^1 — R^2 and M^2 — SM^2 somewhat smaller; white marginal lunules well marked.

Underside with a purplish brown tint all over in side light.—Forewing: median and discal bars very much closer together than median and submedian ones, *nicholi* agreeing in this respect best with the Java form; postdiscal interspaces R^2 — SM^2 very much wider than discal ones, much shaded with drab.—Hindwing: postdiscal interspace SC^2 — R^1 wider than the others, the discal bar SC^2 — R^1 much closer to median bar than this is to submedian one; bars on abdominal fold much more broken in our specimen than in the figure in *Rhop. Exot.*, tail also a little longer.

♀. Unknown.

Length of forewing : ♂, 45—48 mm.

Hab. Burma and Tenasserim ; 1 ♂ in Tring Museum from the Dawnat Range, March 1895 (Hauxwell).

b. Ch. durnfordi durnfordi (Nov. Zool. VII. t. 6. f. 2).

Charaxes durnfordi Distant, *Entom.* XVII. p. 191 (1884) (Sungei Ujong, Mal. Pen.) ; id., *Rhop.*

Mal. p. 432. n. 9. t. 40. f. 8, ♂ (1886) ; Nicév., *Bull. of Ind.* II. p. 278 note (1886).

Haridra durnfordi, Moore, *Lep. Ind.* II. p. 248 (1896) (Mal. Pen.).

♂. *Wings above.*—Forewing : chestnut area more extended than in *nicholi*, reaching to lower angle of cell, and at internal margin to near white postdiscal patch, there being no white discal patch at internal margin ; discal spots SC^5-R^2 and R^3-SM^2 heavy, spot R^2-R^2 minute, last two separated by (SM^1) ; postdiscal spots M^2-SM^2 forming a large M which, at SM^2 , nearly touches the large, admarginal, white patch, which is much larger than in any other race, the two spots M^2-SM^2 being merged together ; discal spot SC^4-SC^5 vestigial ; dots beyond upper angle of cell present ; admarginal dots larger than in *nicholi*.—Hindwing : discal interspaces much shaded with pinkish buff, so that the black discal, luniform bars are very prominent ; the upper four of these bars enlarged (basad) to triangular patches ; postdisco-submarginal black patches all separated from one another, the upper two nearly touching each other, patches SC^2-M^1 about $\frac{2}{3}$ mm. distant from one another, patches R^1-M^2 about as wide as postdiscal white interspaces ; admarginal line interrupted between veins, heavier upon veins ; white marginal half-moons large.

Underside.—Forewing : median interspace M^1-M^2 narrower than discal one ; discal interspaces M^1-SM^2 wider than postdiscal ones.—Hindwing : median bar SC^2-R^1 midway between submedian and discal ones.

Length of forewing : ♂, 48 mm.

Hab. Sungei Ujong, Malay Peninsula.

Up to 1900 only one specimen known to science, the *type*, which is now in the Tring Museum. *Female* unknown.

c. Ch. durnfordi connectens (Nov. Zool. VII. t. 6. f. 3, ♂).

Charaxes (Haridra) durnfordi, Nicéville & Martin (*non* Distant, 1884), *Journ. As. Soc. Beng.* LXIV.

2. p. 437. n. 262 (1895) (*pt.* ; N.E. Sumatra, ♂, ♀).

Charaxes durnfordi, Hagen, *Iris* IX. p. 187. n. 248 (1896) (N.E. Sumatra).

Charaxes (Haridra) connectens Nicéville, *Journ. As. Soc. Beng.* LXVI. 2. p. 554. n. 10. t. 3. f. 24, ♂ (1897) (N.E. Sumatra).

♂. *Wings, above.*—Forewing : discal and postdiscal spots R^3-SM^2 somewhat shorter than in *durnfordi durnfordi*, the admarginal spots M^2-SM^2 not fused together to a large patch, and in other admarginal dots slightly smaller than in *durnfordi*.—Hindwing : brown admarginal line a little heavier, and white submarginal spots (within black postdisco-submarginal patches) on the whole a little smaller than in *durnfordi*.

Underside as in *durnfordi*.

♀. Like ♂, paler, the white spots larger.

Length of forewing : ♂, 48—50 mm.

“ “ “ ♀, 57 mm.

Hab. N.E. Sumatra. In the Tring Museum 2 ♂♂, 1 ♀ from Dr. Martin and 1 ♂ from Dr. Hagen, the latter caught in August 1891.

M. de Nicéville when describing (*l.c.*) the Sumatran specimens of *Ch. durnfordi* as a distinct species (!) avoided giving any differential characters between *connectens* and the Malaccan *durnfordi*; he compares it with the more deviating *nicholi* from Burma and *staudingeri* from Java. As the single specimen of *Ch. durnfordi durnfordi* which is known is in the Tring Museum, we are enabled to point out the above-mentioned differences. But these differences are so slight that they may turn out to be purely individual, considering that the Sumatran specimens are not at all constant in the size of the white markings. As M. de Nicéville has, however, given a name to the Sumatran examples, we must keep the insects in question subspecifically separate, until further material from the Malay Peninsula proves that *connectens* is a synonym of *durnfordi durnfordi*.

The insect is as rare in Sumatra as it is elsewhere. It "occurs in heavy forest on the lower ranges and outer spurs of the Battak Mountains," says Dr. Martin, who took his first specimen in 1888 at Roemeh Kenangkong.

Dr. Hagen received also two specimens from the Battak Mountains; his collector captured a ♂ at Bandar Kwala in Serdang, and Dr. Hagen himself found a ♂ in Serdang in the dense forest.

d. Ch. durnfordi staudingeri (Nov. Zool. VII. t. 6. f. 4, ♂).

♂. *Charaxes staudingeri* Rothschild, *Iris* VI. p. 349. n. 2 (1893) (Java); *id.*, Nov. Zool. II. t. 8. f. 2, ♂ (1895); *Butl.*, *Journ. Linn. Soc. Lond.* XXV. p. 389. n. 113 (1896) (Java).

Charaxes durnfordi-staudingeri (!), Fruhstorfer, *Berl. Ent. Zeitschr.* XLI. p. 302 (1896) (Palabuan, ♂ ♀).

Charaxes durnfordi staudingeri (!), Fruhstorfer, *Ent. Nachr.* XXIII. p. 237 (1897) (♀, Palabuan).

Haridra staudingeri, Moore, *Lep. Ind.* II. p. 248 (1896) ("N. Borneo" *ex errore loco* "Java").

Charaxes (Haridra) staudingeri, Nicéville, *Journ. As. Soc. Beng.* LXVI. p. 535. n. 9 (1897) (Java).

♂ *Wings above* darker than in the preceding races, the basal area of both wings being mummy brown, not chestnut.—*Forewing*: discal spots M¹—SM² shaded with brown, much closer to postdiscal ones than in the other races, spot R²—R³ elongate, thin, more distal than in the other races, the series less irregular in position; spots beyond upper angle of cell obsolete; postdiscal spots R³—SM² very wide, spots SC⁵—R³ small, the upper one often absent, postdiscal patch at internal margin present, the discal one vestigial; admarginal dots absent or faintly vestigial, submedian ones sometimes present, but very thin.—*Hindwing*: median bars very obscure, discal interspaces with little buffish scaling; discal bars much less arched than in the other races, especially bars R²—SM², hence proximal edge of white area much less convex between veins: postdisco-submarginal black patches, often with violet scaling at edges, pointed upon internervular folds, the middle ones often reaching the very heavy admarginal line, patches R¹—M² not broader than the interspaces between them; veins within white area generally a little heavier black in the other forms.

Underside.—*Forewing*: median bars R³—SM² standing in a straight row, the bars themselves angled, bar R²—R³ about 1 mm. from bar R¹—R²; median interspaces R³—SM² much wider than discal ones, the latter narrower than postdiscal ones; outer margin much shaded with brown, especially below apex.—*Hindwing*: discal interspace SC²—R¹ wider than median one.

♀. *Wings above*.—Forewing : both the discal and postdiscal spots very large, the two series close together, except in front ; discal spot R^2 — R^3 placed as in ♂, but separated from the spots near it only by the lower veins ; postdiscal spot SC^5 — R^1 elongate, thin, no spot before SC^5 ; admarginal spots absent, except submedian ones which are vestigial ; no white spots beyond upper angle of cell.—Hindwing as in ♂, but postdisco-submarginal patches larger ; discal interspaces more buffish, hence discal bars more prominent ; admarginal line still heavier, the admarginal white interspaces very narrow, much shaded with violet.

Underside as in ♂, discal luniform bars very feeble, especially on forewing ; the discal and postdiscal series of bars of hindwing rather wider apart than in the Sumatran form.

Length of forewing : ♂, 44—46 mm.

♀, 50 mm.

Hab. Java ; in the Tring Museum 4 ♂♂, 1 ♀ from Tjisolok (*type*, Grelak), Palabuan and Mount Gede (Prillwitz, received from Herr Fruhstorfer).

Dr. Staudinger has with great kindness presented me with the type specimen of this form, which I described from his collection.

e. Ch. durnfordi everetti (Nov. Zool. VII. t. 6. f. 5, ♂).

♂. *Charaxes everetti* Rothschild, *Iris* VI. p. 348. n. 1 (1893) (Barram R., N. Borneo, July 1892) ; id., *Nov. Zool.* II. t. 8. f. 5 (1895) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 389. n. 112 (1896). *Nymphalis durnfordi* (!), Pagenstecher, *Abh. Senk. Gesellsch.* XXIII. p. 404. n. 190 (1897) (Sandakan).

Haridra everetti, Moore, *Lep. Ind.* II. p. 248 (1896) (N. Borneo).

♂ *Body above* and basal area of forewing cinnamon, much paler than in the other subspecies of *durnfordi*.—Forewing : the cinnamon colour extending along internal margin to angle of wing ; discal and postdiscal white markings rather thin, the posterior ones about 1 mm. thick in middle, but all much prolonged distad, forming deeply arched half-moons, except discal spots SC^5 — R^3 which represent acute angles ; white spots beyond upper angle of cell prominent ; discal spots M^2 — SM^2 separate ; admarginal spots present, spots M^2 — SM^2 not fused ; these and the postdiscal spots somewhat violet.—Hindwing : median bars more obvious than in the other races, owing to the pale colour of the wing, discal interspaces pale wood-brown at median bars ; discal bars deeply arched, prominent ; postdisco-submarginal black patches much larger than in the other subspecies, the white postdiscal interspaces reduced to narrow half-moons ; the admarginal white interspaces shaded with violet ; admarginal line heavy ; dirty creamy white marginal lunules not very prominent.

Underside pale, but median interspaces deeper brown, at least on forewing, than in the Sumatran and Malaccan forms.—Forewing : postdiscal, angle-shaped, brown patches very prominent ; median interspace M^1 — M^2 narrower than discal one, median bar R^2 — R^3 nearly 4 mm. distant from bar R^1 — R^2 .—Hindwing : bar D, very prominent, median bars R^3 — M^2 closer to discal bars than in the other forms.

♀. Unknown.

Length of forewing : ♂, 52 mm.

Hab. Borneo. In the Tring Museum 1 ♂ (*type*) from Bukan, N. Borneo, July (A. Everett) ; single specimens also in other collections.

b³. ♂ different from ♀, basal half of wings being creamy olive buff above in ♂, olive tawny in ♀.

2. *Charaxes nitebis* (Nov. Zool. VII. t. 6. f. 6, ♀, Celebes).

♂. *Nymphalis nitebis* Hewitson, *Exot. Butt.* H. Nymph. t. 2. f. 7. 8 (1859) (Celebes); Kirby, *Cat. Diurn. Lep.* p. 272. n. 48 (1871) (Celebes).

♂ ♀. *Charaxes nitebis*, Staudinger, *Exot. Tafel.* p. 173 (1886) (Celebes, Minahassa).

♂. *Body above* raw number colour, thorax somewhat olivaceous green; *underside* creamy buff, sides of sterna somewhat darker.

Wings above black, basal half of forewing and basal two-thirds of hindwing (abdominal fold excepted) covered with creamy scaling which appears creamy olive buff where both upper and under layer are pale, as is the case from base of M² of forewing to near outer edge of pale area, and anteriorly on disc of hindwing, while the remainder of the pale area is greenish olive buff owing to the under layer of scales being black.—Forewing: olive buff area reaching anteriorly just to upper angle of cell, but there is an olive creamy buff patch beyond apex of cell between R¹ and R², generally divided by the black median bar R¹—R² and separated from the area only by the black bar D, outer edge of area sinuate between veins R³ and M², less so between M² and SM², oblique, crossing M² about 11 mm. from edge of wing and reaching internal margin 6 to 8 mm. from posterior angle; median bars R³—M¹ sometimes marked, separating from the area a rather thin lunule, bar M¹—M² sometimes vestigial; two discal and a series of postdiscal spots creamy olive buff: discal spots between SC⁵ and R² 2 to 4 mm. long, separated from each other, about 8 to 9 mm. from upper angle of cell; postdiscal spots smaller, the series concave from R²—M², spot R¹—R² a little more proximal than the next, spot SC⁵—R¹ sometimes vestigial, spots M²—SM² not seldom absent, spot R²—R³ 7 mm. from outer margin.—Hindwing: olive buff area extending costad beyond SC², here the median bar C—SC² generally marked and the cellule C—SC² from base to median bar black, but mostly an olive buff stripe along SC², at outer side of the bar the pale colour forms generally a triangular patch that reaches C and is separated from the rest of the area only by the more or less obviously black vein SC², bar SC²—R¹ seldom marked; abdominal region up to M and M² raw number colour, middle and base of fold somewhat whitish; black outer marginal area widest in front, measuring at SC² about 12 to 15 mm., the olive buff scaling extends distad along veins R³—M² and reaches, at M¹ and M² often the admarginal spots; submarginal white dots minute, the second the largest; admarginal interspaces occupied by greenish olive buff spots, which are widely separated from one another, are externally straight or slightly convex, proximally triangularly dilated at ends, and are often divided at the internervular folds into triangular spots; last spots more or less shaded with yellow; between these spots and the white dots there are the submarginal black dots, which are generally deeper black than the remainder of the black outer area.

Underside buffish wood-brown, discal interspaces creamy white at median bars, outer marginal area down to discal, uniform, bars slightly washed with wax-yellow; bars in basal half somewhat olive, not deep black.—Forewing: median bars R³—SM² continuous or nearly so, bar R²—R³ closer to cell, bars SC⁵—R² about midway between cell and discal series of bars; the latter concave from R¹—M¹, the upper two more proximal than bar R¹—R²; discal interspaces R³—M² much wider than the median interspaces; postdiscal spots light chestnut with an olivaceous tint,

spots M^2 — SM^2 well marked, the others gradually fading away as one approaches the costal margin, the spots separated from the discal bars by thin pale wood-brown interspaces; black submarginal dots more or less faintly vestigial, white scaling between the postdiscal and submarginal spots obvious at apical and posterior angles of wing.—Hindwing: costal subbasal bar (at outer side of PC) absent; median bars almost continuous, forming a slightly convex line from costal to abdominal margin, bars M^2 — SM^2 , though broken twice, much more regular than in the tawny *Charaxes*; submedian series of bars stops generally at (SM^1), but sometimes bar (SM^1)— SM^2 is marked, forming an acute angle with bar M —(SM^1); discal interspaces C — R^3 wider than median ones; postdiscal spots of the same colour as on forewing, more or less halfmoon-shaped, spot SC^2 — R^1 more or less obsolete, spot R^1 — R^2 the heaviest; the white and the black submarginal dots separated by blue or greyish blue scaling, black dot C — SC^2 absent or vestigial; admarginal interspaces pale buff-yellow, separated at veins, nearly straight outwardly; admarginal brown line thin; edge of wing washed with brown and ochraceous; upper tail 3 to 5 mm. long, second a very short tooth.

♀. Body *above* tawny olive, hairs on thorax somewhat olivaceous green; under-side cream colour.

Wings above olive tawny, sometimes rather darker brown, apical two-thirds of forewing brownish black.—Forewing: the black bars not defined owing to the outer two-thirds of the wing being suffused with black, but their position indicated by creamy white or somewhat buffish markings which occupy part of the discal and postdiscal interspaces; the series of discal markings consists of seven spots, of which spots R^3 — M^2 are strongly arched, spot SC^5 — R^1 generally preceded by a creamy white dash, occasionally there are some creamy scales near upper angle of cell between $SC^{4,5}$ and R^2 ; postdiscal spots SC^4 — SM^2 placed like postdiscal interspaces of underside, spot SC^4 — SC^5 often obsolete, the two submedian ones fused, occasionally rather obscurely marked, posterior spots larger than anterior ones; posterior admarginal interspaces sometimes marked as ill-defined buffish or russet spots.—Hindwing: median bars C — R^1 fused with the purplish black area that extends from these bars to base and gradually fades away into the olive-tawny colour of the disc; two creamy white patches at outer side of these bars, often washed over with brown, followed sometimes by some whitish scaling behind R^1 ; postdisco-submarginal black patches C — R^1 extended basad to discal creamy patches, but patch SC^2 — R^1 only so along SC^2 , patches R^1 — M^2 more or less incompletely isolated, longer than broad, their submarginal portions deep black, patches M^2 — SM^2 isolated; white submarginal dots large; admarginal interspaces shaped as in ♂, of the colour of the disc or paler; admarginal line dark brown.

Underside as in ♂, somewhat paler, the white patches in discal interspaces larger; tail as in ♂, somewhat broader.

Length of forewing: ♂, 40—44 mm.

” ” ” ♀, 44—49 mm.

Tenth abdominal tergite deeply sinuate, the two processes not quite so slender as in *Ch. durnfordi*; dentition of penis less heavy, claspers narrower.

Hab. Celebes, and Sula Islands.

The *male* bears a superficial resemblance on the upperside to *Eulepis pyrrhus*.

We recognise two geographical races :

a. Ch. nitebis nitebis (Nov. Zool. VII. t. 6. f. 6, ♀).

Nymphalis nitebis Hewitson, *l.c.*

Charaxes nitebis, Butler, *Proc. Zool. Soc. Lond.* p. 635. n. 51 (1865) (Celebes); Staud., *l.c.*; Rothsch., *Iris* V. p. 437. t. 6. f. 3, ♀ (1892) (S. Celebes).

Nymphalis nitebis, Pagenstecher, *Abh. Senk. Gesellsch.* XXIII. p. 403. n. 188 (1897) (Minahassa; Dongala).

♂. Discal series of bars of underside not heavier than median one, the upper discal bars of forewing rather feeble; median interspace M^2-SM^2 of forewing narrower than the median interspaces before it; black submarginal dots of hindwing smaller than the greyish blue ones.

♀. The pure creamy white portions of the discal patches $C-R^1$ of the hindwing *above* wider than long; discal lunules R^3-M^2 of forewing $1-1\frac{1}{2}$ mm. thick at internervular folds; on *underside* the median interspaces of forewing and the black and blue dots of hindwing as in ♂.

Hab. Celebes. In the Tring Museum 22 ♂♂, 5 ♀♀: from Maros country, August and September 1891 (W. Doherty), Dongala and Tawaya, Palos Bay, August and September 1896 (W. Doherty), Toli Toli, November—December 1895 (H. Fruhstorfer).

We do not find any constant difference between the examples from North and South Celebes. The *males* from the South are on the whole somewhat paler beneath than those from the North, and our single *female* from the South has the postdiscal spots of the forewing above rather buffish.

b. Ch. nitebis sulaensis Rothsch., subsp. nov.

♂. The discal spots SC^5-R^2 of the forewing *above* generally larger than in *nitebis*, the postdiscal spots M^2-SM^2 less often absent; submarginal dots M^2-SM^2 present. The *underside* is less pale than in *nitebis*, the discal bars are heavier black, the median interspace M^2-SM^2 of the forewing is broader than the interspace M^1-M^2 , the black submarginal dots of the hindwing are much larger than in *nitebis*, and the blue spots at their proximal side brighter blue.

♀. The discal spots of the forewing *above* are rather wider than in *nitebis* and purer cream-colour, lunule R^3-M^1 nearly 2 mm. thick at internervular fold, small creamy dots beyond upper angle of cell more distinct, admarginal spots M^1-SM^2 better marked, the others faintly vestigial; on hindwing the creamy white discal spots are larger, being longer than broad, the admarginal spots are obviously paler than the disc, and the black submarginal spots are larger than in *nitebis nitebis*.

The *underside* exhibits the same differences from *nitebis* as the ♂ does.

Hab. Sula Islands. In the Tring Museum from: Mangoli (*type*), W. Doherty, October and November 1897, 13 ♂♂, 1 ♀; Besi, W. Doherty, October 1897, 1 ♀; Mangoli (Dr. Platen), 1 ♂.

*b*². Forewing above without a series of creamy white halfmoons on disc.

*e*³. Upperside of hindwing without a band of large postdiscal, pale blue, halfmoon-shaped patches.

*a*⁴. Forewing above without a creamy, postdiscal, narrow band.

*a*⁵. Bars of underside not pale chestnut, white band of forewing, if present, not considerably narrowed behind.

*a*⁶. Forewing above not blue in ♂, white band not widely interrupted at R^2 in ♀.

The "tawny" *Charaxes* which follow here have so many characters in common that we give a general description of all the species in order to avoid repetition.

♂ ♀. *Wings, upperside*, varying according to species and sex from rich tawny orange to buff yellow, base generally deeper in tint than disc.—*Forewing*: cell-bars generally not marked, but in the paler forms mostly shining through from the underside; bar D more or less heavy, dilated costally, mostly divided by the tawny orange discocellular vein; submedian bars M^1 — SM^2 often showing through from below, median bars R^2 — SM^2 often all or partly well-marked, sometimes absent, median bar R^2 — R^2 about 1 or 2 mm. from cell, median bars SC^3 — R^1 not often absent, generally rather heavy, sometimes forming patches; discal bars luniform, black or brown, the series about parallel to margin, but costally somewhat curving basad, the upper bars often patch-like, closer to outer margin than to cell; discal interspace mostly paler than rest of wing, often white; postdisco-submarginal black or brown patches more or less rounded, if isolated, the postdiscal interspaces separating them from the discal lunules either tawny orange or more or less white; outer edge of wing black or brown, admarginal interspaces paler brown, or tawny orange; very often the discal, postdisco-submarginal and marginal black or brown markings all fused together to form a broad border to the wing, which border often includes a series of brown resp. tawny orange spots, in some cases the black border is costally dilated to apex of cell.—*Hindwing*: abdominal fold pale buff-yellow; median bars C — R^1 mostly marked, the other median bars as well as the submedian and discal ones either not visible, or showing through from below, discal interspace often pale, sometimes white, at least in front; a series of postdisco-submarginal patches, the anterior ones the largest, including a series of white submarginal dots, of which often only the last two are developed; an admarginal black or brown line mostly visible, sometimes complete, often interrupted at veins; the postdisco-marginal area often all black, with or without tawny admarginal interspaces; tails varying in length according to species, sex and individual, longer in ♀ than ♂ as a rule, the second generally short, with the exception of the ♀♀ of a few species, the tails seldom both reduced to mere teeth.

Underside in various tints of brown and yellow, according to species, sex, or individual, olivaceous brown, yellowish, ferruginous, buff-yellow, the darker parts more or less glossy; discal interspace at distal side of median bars often pale, sometimes white; median interspace generally (with some exceptions) darker in tint than the discal and submedian interspaces.—*Forewing*: cell with three arched or undulated bars, sometimes with a fourth bar at base indicated by a dot, cell-bar 3 often separated into dots; submedian and median bars generally well marked, mostly sharply defined; submedian bar R^3 — M^1 often present, very short, close to base of M^1 ; discal bars luniform, in most species more proximal than the black or brown discal lunules of the upperside; postdiscal and submarginal bars mostly indistinct, generally fused together to form ill-defined patches which often bear white scaling in centres representing the white submarginal dots, the submarginal spots are occasionally more bar-like, and the white (silvery) scaling is often much extended, in which case the postdiscal indistinct dark blotches are well separated from the submarginal black or brown spots or bars.—*Hindwing*: basal costal bar never absent, though sometimes rather faintly marked, curved distad; costal subbasal bar seldom present, then situated at the outerside of the praecostal veinlet; subbasal, submedian and median bars more or less discontinuous, forming irregular series the bars on the abdominal fold absent or short, but sometimes scarcely interrupted

between M and SM³, and occasionally joined to each other by a longitudinal line; discal bars regularly arched, bar SC²—R¹ the most proximal of the series; post-discal lunules broader, ill-defined, often much less arched, sometimes nearly straight, especially the posterior ones, the discal and postdiscal series meeting at SM², the series being farther apart in front; a row of black submarginal dots, about midway between edge of wing and postdiscal lunules, more or less shaded proximally with metallic blue scales; at their proximal side, often joined to them, stand white dots; postdiscal and admarginal interspaces not glossy.

Body above of the colour of the base of the wings; *underside* paler, middle of sterna buff or whitish; palpi above (free portions) black, underside buff or white.

In this group we find the commonest *Charaxes* of the Indo-Malayan fauna; the range of the group extends from Ceylon, N.W. India and China to the Bismarck Archipelago.

The Indian and Malayan species are, in the *male* sex, very fond of moisture; they assemble on wet places of roads, sometimes in great numbers.

a⁷. Discal bars of hindwing below all regularly arched, and the series of postdiscal bars convex in middle, nearly parallel to outer margin.

3. *Charaxes latona* (Nov. Zool. VII. t. 11. f. 5, ♀).

Charaxes latona Butler, *Proc. Zool. Soc. Lond.* p. 631. n. 37. t. 37. f. 1, ♀ (1865) ("Timor" *loc. err.*).

♂ ♀. *Body above* tawny orange, rather darker in front than behind; below more tawny at sides, but paler in middle; middle of sterna and tip of anterior tarsi pale buff; femora buffish white, speckled with black scales; underside of palpi whitish buff, paler than middle of prosternum.

♂. *Wings above* slightly paler than thorax, both with a broad black border, or the discal luniform markings of the forewing and the postdisco-submarginal patches of the hindwing isolated, with intergradations.

Underside deeper fulvous than the upperside, less orange, sometimes partly slate-colour, the bars well defined.—Forewing: row of median bars R²—SM² oblique, hence discal interspace R²—SM² narrower behind than at R², bar R³—M¹ just behind bar R²—R³, or very little more proximal, bars M²—SM² resembling in shape the number 3, seldom less pointed at (SM¹); median bars SC³—R² continuous, forming an angle upon R¹ and reaching R² midway between median and discal bars R²—R³; discal bars fulvous brown or black, well defined, deeply and regularly arched, continuous, prolonged distad upon the veins; the postdisco-submarginal patches seldom distinct, the paler scaling within them developed costally to some silvery white patches.—Hindwing: median bar R³—M¹, 1 or 2 mm. beyond origin of M¹, bar M¹—M² exactly behind it or very little more proximal or distal, bar R²—R³ just in front of it, seldom more proximal; discal bars strongly arched, conspicuous, the series curving distad in middle, hence more parallel to outer edge of wing than in the other fulvous *Charaxes*; black and blue submarginal dots convex outwardly, admarginal fulvous brown bars arched, hence the paler admarginal interspaces, at the outside of those dots, much narrowed midway between the veins, being here not wider than, scarcely as wide as, the black dots; upper tail variable in length, triangular, second a mere tooth.

♀. Larger than ♂; wings broader, paler, but basal region often darker; upper tail longer, but sometimes very short, triangular or of nearly even width, not spatulate, second tail always very much shorter than the first.—Wings, *upperside*:

forewing, median bars R^2-M^1 always marked, bar M^1-M^2 also often present, median bars SC^5-R^2 generally developed to triangular patches; discal bar deeply incurved, more or less arrowhead-shaped, especially bar R^2-R^3 , black or fulvous, prolonged distad at the veins, these luniform markings in nearly the same position as the discal lunules of the underside, the latter markings, therefore, not shining through above, or the discal lunules of the upperside are partly a little more proximal than those of the underside (in the allied species the reverse is the case); postdisco-submarginal patches more or less ovate, 2 to 7 mm. in diameter, patch SC^1-SC^5 the largest, black or brownish black, separate from the black, or blackish brown, edge of the wing, but sometimes the admarginal interspace, except the last ones, so densely shaded with black that the rounded outer edge of the spots is scarcely traceable; discal and postdiscal interspaces paler than the basal area of the wing, sometimes white.—Hindwing: median bars $C-R^1$ seldom absent, the following two or three seldom present; bar D present only in a few forms; discal luniform bars present in some subspecies, in the subspecies from New Hanover very heavy; postdisco-submarginal patches ovate, the second the largest, the white submarginal dots within them sometimes absent from the upper patches.

Underside paler than in ♂, the submedian, discal, postdiscal and admarginal interspaces of both wings especially pale, bars as in ♂, discal ones of forewing more arched, the discal interspaces of both wings with fulvous yellow or blackish sealing distally, this sealing forming triangular patches which are distally bordered by the discal lunules.

Length of forewing: ♂, 38—45½ mm.

“ “ “ ♀, 47—57 mm.

Penis with one prominent tooth before the tip (Pl. VIII. f. 1, *papuensis*), usually accompanied by one or two minute teeth, a few more small ones about 2 mm. from the tip; the dentition varies a little, but is essentially the same in all the subspecies of *latona*; no other *Charaxes* has the same armature.

Hab. Sullia Islands, Northern Moluccas, Aru Islands, New Guinea and the islands near its coast, Bismarek Archipelago. Not recorded from the Southern Moluccas (Ceram, Amboina), the Key Islands, North Australia, and the Solomon Islands. The species is geographically very variable; the extreme subspecies (*diana* from New Hanover and *meridionalis* from British N. Guinea) are very different in appearance, but are connected by intermediate forms.

a. *Ch. latona artemis* Rothsch., subsp. nov.

♂. *Wings above*: black border of forewing extending at costal margin nearly to apex, its inner edge concave from SC to M^1 , crossing R^3 6 mm. from D^3 , an indistinct fulvous (discal) spot in the border behind R^1 , no median bars R^2-M^2 ; discocellular bar obsolete behind, being black only in front; outer margin of forewing somewhat more concave than in *latona latona*.—Hindwing as in Batjan specimens, the black border rather narrower; the three last admarginal fulvous interspaces marked, of which the anal one is more yellow, edge of wing (not fringe) brown between R^3 and SM^2 , except at veins.

Underside on the whole somewhat paler than in Batjan and Halmahera examples, especially the forewing, the bars thinner and their whitish plumbeous edges much less distinct; on the hindwing the median bars R^1-M^1 are not continuous, upper end of bar R^2-R^3 more distal than lower end of bar R^1-R^2 , and lower end of bar R^2-R^3 more proximal than upper end of bar R^3-M^1 .

♀. *Upperside* as in the paler tawny orange examples from Halmahera, the markings very variable individually in distinctness and size; bar D of forewing obsolete behind; the last five postdisco-submarginal patches of the hindwing mostly smaller than in *lat. latona*; the discal lunules of the forewing either tawny ochraceous or blackish; outer edge of forewing and admarginal line of hindwing in two specimens deep tawny ochraceous, in one more blackish.

Underside as in Halmahera examples, or the discal, postdiscal and admarginal interspaces more buff-colour; the bars thinner; median bars R¹—M¹ situated as in ♂, not continuous.

Length of forewing: ♂, 40 mm.

” ” ” ♀, 50—55 mm.

Hab. Mangioli (= Mangoli = Mangola), Sulla Archipelago: *type* ♂ (Platen) in coll. Staudinger, 1 ♀ (Platen) in coll. Stand.: 1 ♀ (Platen) and 1 ♀ (Doherty, October 1897) in Mns. Tring.

In the ♀ caught by W. Doherty the median and discal markings of the *upperside* are mostly much darker, and hence more conspicuous, than in the other two ♀♀ examined by us.

b. Ch. latona latona (Nov. Zool. VII. t. 11. f. 5, ♀).

Charaxes latona Butler, *Proc. Zool. Soc. Lond.* p. 631. n. 37. t. 37. p. 1. ♀ (1865) (“Timor” *loc. err.*): Stand., *Ecol. Tagf.* p. 172 (1886) (*latona* ♀, = *cimon* ♂, Batjan, Halmahera): Honr., *Berl. Ent. Zeitschr.* XXX. p. 131 (1886) (*latona* ♀, = *cimon* ♂, = *brennus* ♀): Butl., *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 136 (1896) (*syn. ex parte*: “Timor” *loc. err.*; “a. Macassar, b. Amboyna, d. Aru” = *affinis*, c is ♂, not ♀).

Charaxes brennus Felder, *Reise Novara, Lep.* p. 439. n. 715. t. 59. f. 1. 2, ♀ (1867) (Gilolo); Butl., *Trans. Ent. Soc. Lond.* p. 120. n. 6 (1870) (*brennus* ♀ of *affinis*?).

Charaxes cimon Felder, *l.c.* n. 716. t. 58. f. 6. 7, ♂ (1867) (Batjan); Butl., *l.c.* n. 7 (1870) (distinct; both sexes seen); id., *Journ. Linn. Soc. Lond.* XXV. p. 395. n. 130 (1896) (Batjan).

Nymphalis latona, Kirby, *Cat. Diurn. Lep.* p. 272. n. 49 (1871) (“Timor” *loc. err.*; Gilolo): Pagenst., *Abh. Senck. Gesellsch.* XXIII. p. 404. n. 189 (1897) (Batjan; not “Celebes”).

♂. *Wings, upperside*.—Forewing: black outer area occupying anteriorly more than half the wing, extending often along SC to apex of cell, being here 20 mm. (or more) wide, the area gradually narrowing behind, measuring 8 or 9 mm. at SM², more or less obviously incised at R³ and M¹; discal bars SC⁵—R² fused with the black area, but sometimes (in a Halmahera specimen) partly separated from it by two fulvous orange spots; (the same individual has a fulvous orange postdiscal spot before SM²); median bars R²—M¹ always (?) present in Batjan individuals, occasionally also bars M¹—(SM¹), in most Halmahera examples only the median bar R²—R¹ is marked, and this is occasionally also wanting; bar D mostly feebler behind than in front, in some Halmahera specimens obsolescent behind.—Hindwing: median bars C¹—R¹ present in all Batjan specimens, which, moreover, have also the disco-cellular bar feebly marked; in Halmahera individuals the bar SC²—R¹ is mostly absent; the black outer area is 12 to 15 mm. wide behind SC², its edge so irregular, the black scaling extending along the upper veins; the rounded postdisco-submarginal patches are traceable in the area, the posterior patches are partly, and more or less obviously, separated from one another and from the black marginal line; the three upper submarginal white dots are sometimes minute or obsolete.

Underside dark russet, distal portion of discal interspace of forewing and postdisco-submarginal interspaces of hindwing slaty grey and glossy, forewing at outside of median and discal bars and hindwing at outside of discal bars fulvous-ochraceous;

the bars heavy, their plumbeous edges also conspicuous; admarginal interspaces of hindwing dirty gallstone-yellow. Upper tail 4—5 mm., second half the length or less.

♀. *Wings, upperside*, basal area up to median bars varies from brownish tawny orange to ochraceous tawny orange, being on the whole browner in the specimens from Batjan than in those from Halmahera; the discal, postdiscal and admarginal interspaces paler, being dark orange ochraceous, except the outer portion of the discal interspaces at the postdiscal bars, and the posterior portion of the disc of the hindwing, which are of nearly the same tint as the bases of the wings.—Forewing: median bars SC^5 — R^2 forming triangular patches, bars R^2 — M^1 generally also heavy, while median bar M^1 — M^2 is mostly feebly marked; of the discal, luniform, bars, the upper three are the heaviest, the others are often fulvous, not black.—Hindwing with two median bars, only in one specimen (type of *brennus*) with one bar.

Underside: submedian, proximal portion of discal, and admarginal interspaces, buff-colour, median interspace much more brown; all the bars heavy, inclusive of those on the abdominal fold; postdiscal luniform spots of the hindwing tawny russet; the discal, black, lunules of the forewing a little more distal in the Batjan specimens than in most individuals from Halmahera. Upper tail 6—8 mm long, second $2\frac{1}{2}$ — $3\frac{1}{2}$ mm.

Length of forewing: ♂, 39—45 mm.

” ” ♀, 48—55 mm.

Hab. Northern Moluccas. In the Tring Museum from Halmahera, 4 ♂♂, 5 ♀♀; Batjan, 5 ♂♂, 7 ♀♀ (W. Doherty, March 1892, 1 ♀).

The type of *latona* was said to be from “Timor,” but it does not differ from Halmahera individuals; the figure in *P.Z.S.* 1865 is rather roughly executed. The specimen was bought, according to the “Register,” from Mr. Stevens, together with a number of other Lepidoptera, all said to be collected by Mr. Wallace on Timor. This collection contained several well-known North Moluccan forms which cannot be expected to occur as such on Timor (see *Nov. Zool.* VI. p. 442).

The specimens from Batjan are on the whole darker than those from Halmahera; but the distinctions do not hold good according to the material from both islands submitted to us for examination and selection by Messrs. Standinger and Bang-Haas. In one of our Batjan ♂♂ the black scaling of the upperside is much more extended than in ordinary specimens, the costal margin of the forewing and anterior third of the cell are black, the tawny area of both wings is also less bright than in ordinary ♂♂.

c. Ch. latona ombiranus Rothsch., subsp. nov.

♂. As large as the largest specimens of *latona latona*.

Wings, upperside.—Forewing: black area fully as wide as in the average example of *latona latona*; bar D obsolete behind; median bars R^2 — M^1 developed; edge of black area not obviously incised upon R^3 and M^1 .—Hindwing: black area wider behind than in *latona latona*, a slight indication of the tawny admarginal interspaces M^1 — SM^2 .

Underside darker than in *latona latona*, the bars still heavier.—Forewing: the postdisco-submarginal patches very indistinctly marked, extending close to the discal lunules, admarginal interspaces less yellow than in *latona latona*, interrupted at the veins; in one specimen the outer half of the wing minutely striolate transversely.—Hindwing: admarginal, gallstone-yellow, interspaces more deeply concave outwardly than in the allied form; tails somewhat longer.

♀. Much more different from *latona latona* than ♂.

Wings, upperside, basal area darker than in subspecies *latona* (as is also the body).—Forewing: the median bars SC¹—M¹ very heavy, bar M¹—M² also heavy, all black; discal luniform bars brownish black, all sharply marked, but not heavy, the upper ones not heavier than the others; postdisco-submarginal patches sharply defined, well separated from the brownish black outer border of the wing, patches SC³—SC⁵ fused together, larger than in *latona*, vein SC⁴ not tawny within this patch; the discal postdiscal and admarginal interspaces buff or whitish buff, more yellow at the proximal side of the discal lunules.—Hindwing: median bars C—R¹ present, the upper three heavy, discal interspace between these bars and the black postdisco-submarginal patches buff; discal lunules of the underside faintly marked; postdisco-submarginal patch larger than in the other Moluccan subspecies; admarginal interspace buff, hence black marginal line very conspicuous.

Underside: bars very heavy; submedian (partly), discal, postdiscal and admarginal interspaces buff; basal, subbasal, and median interspaces much deeper brown than in *latona latona*; postdisco-submarginal spots of forewing indistinct and small; postdiscal lunules of hindwing dark chestnut, the contiguous patches outside them, which include the white submarginal dots and extend distally to the black submarginal dots, hair brown, darker than in *latona*.

Length of forewing: ♂, 45½ mm.

 ♀, 54—56 mm.

Hab. Laiwui, Obi, 2 ♂♂, 2 ♀♀ (W. Doherty, Sept. 1897).

The differences from the other forms of *latona* are very conspicuous in the ♀. The ♀ of *latona ombirani* resembles more the ♀ of *latona diana* from New Hanover than the ♀♀ of those subspecies which are geographically nearer.

d. *Ch. latona papuensis*.

Charaxes papuensis Butler, *Lep. Erot.* p. 15. t. 6. f. 1, ♂ (1869) (Dory = Dorey, ♂, not ♀, from Aru); id., *Journ. Linn. Soc. Lond.* XXV. p. 395. n. 131 (1896) (N.W. Guin.; *cimonides* "Rothschild" *ex err.*).

Nymphalis affinis var. b. *C. papuensis*, Kirby, *Cat. Diurn. Lep.* p. 272. sub. n. 50 (1871) (Papua).

Charaxes cimonides Grose-Smith, *Nov. Zool.* II. p. 356. n. 124 (1896) (Humboldt Bay).

♂. *Wings, upperside*.—Forewing: the black outer border not so wide in front as in *latona latona*, hence less narrowing behind; black median bars SC⁵—R² standing separate from the black border, often absent, the same in position as the respective bars of the underside; discocellular bar mostly obsolete behind, very seldom the posterior portion of the bar black; median bars R²—SM² absent, or slightly showing through from below, only in one individual from Humboldt Bay are median bars R²—M² marked.—Hindwing: no constant difference from the examples of *latona latona*, except that the tails are shorter; the white submarginal dots are minute, the upper ones mostly absent; of the admarginal tawny spots only the last one before SM² is always indicated, the one in front of M² is also often traceable, while the preceding ones are very seldom vestigial.

Underside: paler brown than in *latona latona*, not appearing so much variegated in colour; the bars much thinner, the bars on the abdominal fold thin or absent; postdiscal interspaces of hindwing much less bright in colour, the postdisco-submarginal grey interspaces less glossy, the admarginal line of the hindwing much paler brown, wider, less sharply defined, the yellow admarginal interspaces of the

same wing much less conspicuous, being less yellow and smaller; the brown marginal line broader, less well-defined than in the Moluccan race.

♀. *Wings*, fringe (as in ♂) less extended white than in *latona latona*.

Upperside.—Forewing: upper discal luniform bars not heavier than the others, except in a ♀ from Waigen and another from Salwatti, closer to the post-disco-submarginal black (or brownish black) patches than in *latona latona*, except in the Waigen specimen.—Hindwing: black, or blackish brown, marginal line broad, interrupted at the veins, much less curved between veins than in *latona latona*; tails shorter.

Underside differs from that of *latona latona* ♀ in the same way as in ♂: besides, the buff yellow colour at the distal side of the median bars of both wings is more restricted.

Length of forewing: ♂, 40—43 mm.

“ “ ♀, 47—53 mm.

Hab. Dutch New Guinea. In the Tring Museum from Dorey, 2 ♂♂, 3 ♀♀; Humboldt Bay, 3 ♂♂ (Doherty): Skroe, S.W. New Guinea, 2 ♀♀; Kapaur, S.W. New Guinea, 14 ♂♂, 2 ♀♀ (W. Doherty, December 1896 to February 1897): Waigen, 2 ♂♂, 1 ♀ (Dr. Platen, rec. from Messrs. Staudinger and Bang-Haas): Salawatti, 1 ♀ (H. Kühn).

Type of *papuensis* in coll. Grose-Smith from coll. Saunders.

The three Humboldt Bay examples (described by Mr. Grose-Smith as *cimonides*) approach the following subspecies in the median bars SC^5-R^2 of the upperside of the forewing standing closer to the black border of the wing than in the ordinary individuals of *papuensis*; in one of the three individuals the median bars R^2-M^2 are marked on the upperside of the forewing, and there are tawny, postdiscal, rather obscure, lunules in the black border of the forewing between R^2 and SM^2 : on the hindwing of this specimen, above, the tawny admarginal interspaces R^1-SM^2 are marked, the three last are especially clearly defined, and the black postdisco-submarginal patches R^1-SM^2 are partly well-defined.

e. Ch. latona stephanus Rothsch., subsp. nov.

Charaxes latona v. *cimonides*, Staudinger (*non* Grose-Smith, 1894), *Iris* VII. p. 120 (1894) (Konstantinhafen).

Charaxes affinis var. *papuensis*, Hagen, *Jahrb. Nass. Ver. Nat.* L. p. 94. n. 160 (1897) (Germ. N. Guinea).

Though the country inhabited by the present subspecies is farther away from the Moluccas than the area occupied by the preceding subspecies (*papuensis*), *Ch. latona stephanus* is nevertheless intermediate in characters between *latona papuensis* from Dutch New Guinea and *latona latona* from the Northern Moluccas. This fact is so interesting and is of so high importance for the study of geographical variation, that we must fix the knowledge of it by giving a name to the race occupying the eastern part of northern New Guinea.

♂. *Forewing above* with the black border broader in front than in *latona papuensis*, its inner edge more irregular; median bars SC^5-R^2 entirely fused with black border, or with a small fulvous spot each at the distal side.—Hindwing as in *papuensis*, but the tails very short as a rule, and the black border on the whole a little narrower.

Underside as in *papuensis*.

♀. *Wings above* as in ♀ *papuensis*, but the discal luniform bars of the forewing blacker, deeper incurved, more angulated, especially bar R²-R³.—Hindwing as in *papuensis*, tails shorter.

Underside: four upper discal bars of forewing more angle-shaped than in *papuensis*.

Length of forewing: ♂, 38—45 mm.

” ” ” ♀, 50 mm.

Hab. Northern parts of German New Guinea. In the Tring Museum: 12 ♂♂, 5 ♀♀ from Stephansort and Erima (Dr. Hagen, February, April, August, September, December).

Dr. Hagen found this form in February, April, July, August, October, December, and concludes that apparently a new brood appears regularly every two months.

f. *Ch. latona layardi*.

Charaxes latona, Pagenstecher (*non* Butler, 1865), *Jahrb. Nass. Ver. Nat.* XLVII. p. 77. n. 32 (1894). (Neu Lauenburg); Ribbe, *Iris* XI. p. 132 (1898) (Neu Pommern; Neu Lauenburg); Pagenst., *Lepidopt. Bismarck-Land*, in Chun, *Zoologica*, Heft 27. p. 91 (1899) (*p. parte*; Ralum).

Charaxes layardi Butler, *Journ. Linn. Soc. Lond.* XXV. p. 395. n. 132 (1896) (N. Britain; N. Ireland, ♂♂).

♂. Very close to *Ch. latona stephanus*, but the postdisco-submarginal patches of the upperside of the hindwing partly separated from each other, the admarginal tawny interspaces at least vestigial between all the veins.

♀. *Wings above*.—Forewing: discal luniform bars appearing farther away from the postdisco-submarginal patches, the latter being smaller, than in *papuensis* and *stephanus*, well separated from the marginal line.—Hindwing: discal bar C—SC² well marked, all the other discal (luniform) bars vestigial; the ground-colour between these discal lunules and the marginal line of (about) the same pale orange-yellow colour as the disc at the outside of the median bars C—R²; postdisco-submarginal patches farther away from the marginal line than in the allied races from German and Dutch New Guinea, more triangular, and marginal line much thinner.

Underside more yellow than in the before-mentioned races, the discal (black) lunules of the forewing farther away from the rather well-defined postdisco-submarginal patches, the interspace between the lunules and the patches pale yellow; cell uniform in tint. On the hindwing the interspace between the discal lunules and the tawny chestnut, postdiscal, spots broader than in *papuensis* and *stephanus*, the pale yellow admarginal interspaces more than twice the width of those of the allied New Guinean subspecies; marginal line thin, well separated from fringe; median interspace of both wings rather dark brown.

Length of forewing: ♂, 45 mm.

” ” ” ♀, 54 mm.

Hab. Bismarck Archipelago: Neu Pommern (= N. Britain); Neu Lauenburg (= Duke of York Is.); Neu Mecklenburg (= N. Ireland). In the Tring Museum from: Kinigunang, Neu Pommern, 1 ♂, and Mioko, Neu Lauenburg, 1 ♀ (C. Ribbe).

Both Dr. Pagenstecher and Herr Ribbe say that the specimens they have examined are not distinguishable from the individuals from German N. Guinea (Konstantinhafen), while Dr. Butler considers them to be specifically distinct from *papuensis*, *layardi* being “a representative of *C. cimon*.” *Ch. cimon* stands in Dr. Butler’s Revision two pages separate from *Ch. latona*, of which it is a synonym.

g. Ch. latona diana (Nov. Zool. V. t. 7. f. 3, ♀).

Charaxes latona diana Rothschild, Nov. Zool. V. p. 96. n. 1 (1898) (N. Hannover); Pagenst., Lepidopt. Bismarck-Arch., in Chun, Zoologica, Heft 27. p. 91 (1899).

♂. *Wings, upperside*, more extended black than in any other form of *latona*, also darker orange fulvons.—Forewing: black outer area extending close to upper angle of cell and posteriorly to near middle of internal margin.—Hindwing: black disco-marginal area wider than in *latona latona*, tawny admarginal interspaces absent, except anal one; median bars C—R² heavy, discal interspaces between them and black area paler, median interspaces at proximal side of those bars darker than the rest of the tawny area of the wing.

Underside darker than in *latona latona*; median line of black bars obviously bordered white distally, discal interspaces pinkish white proximally from R² of forewing to R² of hindwing.

♀. The markings in the same position as in the other forms of *latona*, but the black colour very heavy, and the ochraceous colour partly replaced by white.

Upperside.—Forewing: basal area dark russet brown; median bars very heavy, bars SC^{4,5}—R² forming a large black patch; discal and postdiscal interspaces white; discal line of bars separating them well marked, the bars deeply arched; postdisco-submarginal black spots much larger than in *latona latona*, merged together with the marginal line, except the last which is partly separated from the marginal border by a tawny line.—Hindwing: russet tawny; median bars C—R² as in ♂, median interspaces dark brown at and near these bars, discal ones white or nearly white proximally; a discal series of six or seven black lunules crosses the wing about midway between cell and black postdisco-submarginal patches, discal luniform bar C—SC² in one of the two specimens not separated from the postdisco-submarginal patch; postdiscal interspaces tawny, except interspace SC²—R¹; postdisco-submarginal patches much larger than in all the other forms of *latona*, with minute white centres, all touching one another, except the last two; admarginal interspaces bright tawny ochraceous.

Underside differs from that of *latona latona* in the cell of forewing, proximal portions of discal interspaces of both wings, and greater part of submedian interspaces of hindwing, being white; tail broad.

Length of forewing: ♂, 47 mm.

 " " " ♀, 53—57 mm.

Hab. Neu Hannover, Bismarck Archipelago, 1 ♂, 2 ♀♀ (Capt. H. C. Webster, February and March 1897).

h. Ch. latona gigantea.

Charaxes gigantea Hagen, Jahrb. Nass. Ver. Nat. L. p. 94. n. 161 (1897) (Simbang).

♂. *Wings, upperside*.—Forewing: discal luniform bars separated from the black postdisco-marginal border of the wings by tawny orange halfmoons: the three upper bars heavy, the tawny orange spots at their distal side small, bar R²—R³ indistinct, almost fused with the black border, which is somewhat widened between R² and R³, bars R³—SM² orange tawny, about 1 mm. distant from the black border between veins; median bars SC⁵—R² midway between cell and discal bars, bars R²—M² vestigial.—Hindwing: postdisco-submarginal patches R¹—SM² more or less

completely isolated, patches C—R¹ fused with one another, but separated from the black, heavy, marginal line by a small, orange tawny, admarginal spot, the distance from proximal edge of black patches to tip of SC² somewhat shorter than the distance from the same point to black median bars; tails very short.

Underside much more tawny orange, much brighter, than in *papuensis* and *stephanus*; discal interspaces of fore- and hindwing at outside of median bars partly buff yellow as in ♀♀ of the allied forms; postdiscal interspaces of hindwing wider, and the admarginal ones wax yellow.

♀. *Wings, upperside*, as in *papuensis*, but the discal luniform bars of the forewing more tawny, somewhat thinner, and the marginal line of the hindwing also thinner, more widely separated into lunules at the veins.

On the *underside* the discal lunules of both wings are less blackish, the discal interspaces are more extended pale buff at the median bars, the postdiscal interspaces of both wings and the admarginal ones of the hindwing are wider than in the races from northern and western New Guinea; tails as in *papuensis*.

Length of forewing: ♂, 45 mm.

” ” ” ♀, 52—54 mm.

Hab. Simbang, Huon Golfe, German New Guinea: 1 ♂ (*type*), December 16th 1894 (Dr. Hagen), 1 ♀, January 20th 1895 (Dr. Hagen), 1 ♀ ('apt. Webster).

i. *Ch. latona leto*.

Chiraxes latona leto Rothschild, Nov. Zool. V. p. 97. n. 2 (1898) (Goodenough; Fergusson).

♂. Agrees with *Ch. latona gigantea*, except in the following particulars:—

Upperside.—Forewing: a series of brown discal luniform bars standing 2½ mm. from the black border of the wing; these bars are extremely faint in *gigantea* and only 1 mm. distant from the black border, which is broader in *gigantea* than in *leto*, bar SC⁵—R¹ twice as wide in *leto*, the tawny orange interspace distal of it larger than in *gigantea*, no tawny orange interstitial spot SC¹—SC⁵.—Hindwing: postdisco-submarginal black patches smaller, admarginal orange tawny interstices larger, than in *gigantea*.

Underside: no small yellowish buff discal patches at outer side of median bars, but ground-colour in discal interspaces of forewing proximally paler than elsewhere; hindwing with a greyish plumbeous gloss, except a marginal and a postdiscal band.

♀. Unknown.

Length of forewing: ♂, 45—47 mm.

Hab. D'Entrecasteaux Islands: Goodenough I., 1 ♂ (*type*) (A. S. Meek, December 1896), Fergusson I., 1 ♂ (A. S. Meek, between September and December 1894).

j. *Ch. latona meridionalis* Rothsch., subsp. nov.

♂. The specimens in which the discal lunules of the forewing *above* are least isolated (*type*) agree almost with *gigantea*, but can be distinguished by the discal lunules R²—M², which are almost completely fused with the black border of the wing, being more black; further, by the median bars C—R¹ of the hindwing being absent or very feeble; the postdisco-submarginal patches C—R³ of the hindwing are, moreover, fused with the heavy marginal bars, but remain separated from each

other, the veins being tawny; tail somewhat longer than in *gigantea*. In other individuals the discal lunules of the forewing are all separated from the black border of the wing, and all the black postdisco-submarginal patches of the hindwing stand separate from each other and from the marginal bars; such specimens differ very little from *leto*, but the median bars SC^4-R^3 of the forewing *above* are somewhat more proximal, the median bars $C-R^1$ of the hindwing *above* are feebler, and the posterior postdisco-submarginal patches of the hindwing are comparatively larger.

♀. *Wings above* darker tawny orange in basal region than in *gigantea*, the discal lunules of the forewing almost as in *stephanus*, more blackish than in *gigantea*, and heavier; discal and postdiscal interspaces more orange than in *stephanus*; marginal line of hindwing nearly as in *stephanus*, heavier and blacker than in *gigantea*; tails as in *gigantea* and *papuensis*, longer than in *stephanus*.

Underside much darker than in *gigantea*, agreeing with that of *stephanus*, the median and discal interspaces, however, more extended yellow-buff, especially the former.

Length of forewing: ♂, 41—45 mm.

” ” ” ♀, 51—57 mm.

Hab. Milne Bay, Brit. New Guinea, a series of both sexes caught by Mr. A. S. Meek in December 1898, and in January, February, and March 1899.

k. *Ch. latona aruanus*.

Charaxes papuensis Butler, *Lyp. Erot.* p. 15. n. 6, ♀, not ♂, t. 6. f. 4, ♀ (1869) (Aru).

Charaxes aruanus Butler, *l.c.* p. 100 (1872) (Aru); Ribbe, *Iris* I. p. 84. n. 80 (1886) (Aru).

Charaxes latona Butler, *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 136 (1896) (*sub synon.*; Aru “♀” is ♂ *affinis*).

♂. Unknown to us, no description published anywhere. Most likely similar to the ♂ of *meridionalis* or *papuensis*.

♀. Similar to the ♀ of *Ch. latona papuensis* from N.W. Dutch New Guinea, but differs in the following details:—

Upperside.—Forewing a little more falcate, the discal arched bars not black, but tawny orange, only bar SC^4-SC^5 being marked by some black scales, hence these bars much less prominent than in the New Guinea races: postdisco-submarginal patches not touching the narrow black marginal border.—Hindwing: postdisco-submarginal patch $C-SC^2$ much larger than patch SC^3-R^1 , the other six patches very much smaller than in the average New Guinea ♀; admarginal bars tawny, upper three somewhat blackish, not prominent.

Underside: discal arched bars of both wings less black than in the allied races, discal bars SC^4-R^1 of forewing very ill-defined, not being deeper in colour than the ochraceous, triangular patches standing at their proximal side; tawny ochraceous admarginal spots of hindwing ill-defined; tail triangular, 4 mm. long.

Length of forewing: ♀, 48 mm.

Hab. Aru, described from the *type* in the Oxford Museum, which Prof. E. B. Poulton kindly sent us for comparison with *females* of *latona* from other localities.

Ribbe collected this species on Aru, but where his specimens have gone to we do not know. The individuals labelled Aru in the Godman-Salvin collection, now in the British Museum, are *affinis*, which occurs only in Celebes.

b. Discal bars of hindwing below less regularly arched, especially the posterior ones, postdiscal series of bars almost straight, hence much farther from outer margin near R^3 than near SC^2 .

a. ♂, hindwing above with a black, scarcely interrupted, admarginal line, penis with a patch of teeth on the right side (Pl. VIII. f. 2. 3); ♀, black postdisco-admarginal patches of forewing above all separated, patch SC^3 — SC^4 small, isolated.

4. *Charaxes affinis* (Nov. Zool. VII. t. 11. f. 6. ♀).

- ♂. *Charaxes affinis* Butler, *Proc. Zool. Soc. Lond.* p. 636. n. 58. t. 37. f. 4, ♂ (1865) (Macassar); Honr., *Berl. Ent. Zeitschr.* XXX. p. 131 (1886) (*affinis* ♂, = *wallacii* ♀); Staud., *Exot. Tagf.* p. 172 (1886) (gynandrom. specim.); Honr., *Berl. Ent. Zeitschr.* XXXII. p. 499. fig. A (1888) (gynandrom. specim.); Rothsch., *Iris* V. p. 438 (1892) (S. Celebes); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 396. n. 135 (1896) (Macassar, Menado; "Ternate" *loc. err.*); *Nymphalis affinis*, Kirby, *Cat. Diurn. Lep.* p. 272. n. 50 (1871) (*pt.*; Celebes). *Charaxes parmenion* Felder, *Reise Novara, Lep.* p. 439. n. 717 (1867) (Macassar); Butl., *Trans. Ent. Soc. Lond.* p. 120. n. 8 (1870) (*parmenion* = *affinis*). *Charaxes demonax* Felder, *l.c.* p. 440. n. 718 (1867) (Celebes); Butl., *l.c.* n. 9 (1870) (*demonax* = *affinis*); Jans., *Cruise Marchesi* II. p. 375. n. 56 (1886) (Maros). *Nymphalis polyxena* var. *C. parmenion*, Kirby, *Cat. Diurn. Lep.* p. 272. sub n. 52 (1871) (Macassar). *Nymphalis polyxena* var. *C. demonax*, Kirby, *l.c.* (Celebes). ♀. *Charaxes wallacii* Butler, *Lep. Exot.* p. 100. t. 38. f. 2 (1872) (Macassar). *Charaxes latona* Butler (non Butler, 1865), *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 136 (1896) (*partim*; Macassar; "Aru," "Amboina" *loc. err.*, Aru "♀" is ♂). *Nymphalis affinis*, Pagenstecher, *Abh. Senck. Naturf. Ges.* XXIII. p. 403. n. 185 (1897) (Celebes). *Nymphalis latona*, id., *l.c.* p. 404. n. 189 (1897) (Celebes, not "Batjan").

♂ ♀. *Body above*, especially the thorax, less bright tawny orange than the wings, more ochraceous.

♂. *Wings, upperside*, bright tawny orange, abdominal fold for the greater part buff.—Forewing rather falcate, outer edge either nearly entire, or denticulate; posterior half or two-thirds of bar D obsolete; median bars SC^2 — R^2 heavy, forming generally triangular patches which are more or less fused with the black outer area, but the second stands sometimes quite isolated, median bar R^3 — M^1 seldom clearly marked above, about 6 mm. distant from origin of M^1 (as on underside); black postdisco-marginal area much narrower behind than in front, measuring about 4 mm. at SM^2 ; discal bar M^2 — SM^2 present, either heavy and separated from black border of wing by a small tawny orange spot between veins, or feeble and then more or less completely isolated (in all specimens from North Celebes?), bar M^1 — M^2 stands also often partly separated from the black border, these discal bars much more distal than the discal bars of the underside; edge of wing with two minute tawny dots between M^2 and SM^2 in the greater number of individuals; fringe white between veins.—Hindwing somewhat variable in shape, anal angle more prominent in some specimens than in others; median bar C— SC^2 seldom absent, in some specimens also bar SC^2 — R^1 marked; postdisco-submarginal patches C— R^1 large, the others small, patch SC^2 — R^1 at least 6 mm. long, the black scaling extending, moreover, in many specimens along SC^2 basad for several millimetres, all the other patches separated from one another; white submarginal dots within those patches variable, often partly absent; admarginal line black, sharply marked, separated from edge of wing, at least posteriorly between the veins where it is generally thin, from

C to R³ it is generally heavy, dilated along the veins and joined to, or partly fused with, the postdisco-submarginal patches; upper tail acute, 3 to 4 mm. long, second very short, sometimes not so much prominent as the teeth SC²—R².

Underside: varying from ochraceous to ochre yellow, the glossy parts appearing darker (slaty grey) in side light, the discal interspaces lighter at the median bars, all the bars much thinner than in *latona*.—Forewing: submedian bar M¹—M² rather oblique, bar M²—(SM¹) about midway between base of M² and bar M¹—M², often also oblique, bar R³—M¹ always about (in both sexes); discal bars more distal than in *latona*, less arched, the series not interrupted at R²; postdiscal patches very obscurely marked, with ill-defined, white patches at their distal side, of which the middle ones are mostly very feeble; upper cell-bar curved twice, the middle portion pointing distad, basal cell-spot at least vestigial, costal margin somewhat greyish at base.—Hindwing: median series of bars much broken, none of the bars contiguous, bar R³—M¹ several millimetres distant from base of M¹, not standing very far from the discal series, bar R²—R³ much more distal than bar R¹—R², the discal interspace, therefore, not half the width between R² and M¹ as between C and R²; discal bars much less arched than in *latona*, the posterior ones almost straight, the series not parallel to outer margin of wing, it being slightly curved basad from C—R³ and then running nearly straight to SM³, which it reaches close to anal angle; postdiscal bars indistinct, represented by blackish, ill-defined, feebly curved lunules, interspace between them and the discal bars tawny outwardly, more yellow proximally; admarginal blackish brown line thin, but well-defined, not touching edge of wing, sometimes interrupted at veins.

♀. Often confounded with the ♀ of *latona*.

Wings, upperside.—Forewing: outer margin more concave than in *latona*; median bars SC³—R² less enlarged than in *latona*, somewhat more distal; discal luniform bars more distal than in *latona* and also much more distal than the discal bars of the underside, which show through, the upper ones more or less enlarged; postdisco-submarginal patches more triangular than in *latona*, closer to edge of wing, often fused with the black-brown margin; marginal line much thinner than in *latona*, very indistinctly defined, the pale tawny orange colour extending close to the fringe at the veins.—Hindwing: median bars C—SC² always (?), SC²—R¹ mostly present, bar R¹—R² seldom distinctly marked, disc outside these bars often very pale; discal lunules shining through from below; there is often a very indistinct, band-like, dark shade from the inner edge of the upper postdisco-submarginal patches straight to anal angle, corresponding to the black postdiscal band of the underside, this shadowy band sometimes ending in a conspicuous blackish half-moon at anal angle; postdisco-submarginal patches closer to margin than in *latona*, the posterior ones always small, the middle and upper white submarginal dots seldom obliterated; admarginal line thin, but well-defined, broken up into slightly arched lunules, the upper ones heavier; upper tail spatulate, 7 mm. long, second a very short and blunt tooth.

Underside: discal interspaces of both wings, the greater part of the postdiscal and submedian interspaces of the forewing ochre yellow, median interspace of both wings more or less brown; bars thinner than in *latona*.—Forewing: submedian bar M¹—M² always considerably more distal than submedian bar M²—(SM¹), and median bar R³—M¹ much more so than median bar M¹—M²; discal luniform bars less deeply arched than in *latona*, more distal in position; postdisco-submarginal spots much shaded with white scales, consisting generally of a blackish proximal

(postdiscal) dot or dash which is separated from a similar, but less obvious, spot by whitish scales; from the postdiscal dots extend basad fine, yellow, lines situated at the internervular folds R^3 — SM^2 , these lines sometimes very faint.—Hindwing: discal interspace very much narrowed between R^2 and M^1 , the median bars R^2 — M^1 not far from the discal series, especially bar R^3 — M^1 ; discal bars luniform, the posterior ones very feebly arched, the series very slightly convex from SC^2 — M^1 , reaching SM^2 much nearer tip of that vein than in *latona*; postdiscal bars slate-black, much less arched than in *latona*, the series almost straight.

Length of forewing: ♂, 38—44 mm.

” ” ♀, 50—53 mm.

Hab. Celebes, 23 ♂♂, 7 ♀♀ in the Tring Museum from South Celebes: Maros country (W. Doherty, August—September 1891), Patunnuang (H. Fruhstorfer, January 1896); Macassar (Wallace); Menado (Dr. Meyer); North Celebes: Minahassa (Dr. Platen), Toli-Toli (H. Fruhstorfer, November—December, 1895), Dongala, north of Palos Bay (W. Doherty, August—September 1896).

There are two specimens in the Felder collection which are labelled “Amboina, Lorquin.” The British Museum received from the Godman and Salvin collection also a specimen of *affinis* from “Amboina,” another from “Aru” (both standing in Dr. Butler’s Revision of *Charaxes* under *latona*!), and a third from “Ternate.” All these specimens are identical with *affinis*, and those localities are certainly erroneous. We know from experience that the material bought by travellers in the Dutch East Indies from captains, natives or dealers, is often wholly unreliable as regards localities, specimens from different islands being often mixed together; we have found Javanese species among material from Amboina, Celebes species in a lot from Java, Java examples in a collection said to be from Timor, etc., forms of which we are absolutely certain that they do not occur in the localities from which the specimens were said to come. Nobody will convince us that *Ch. affinis* occurs on Ternate, Amboina and Aru, unless he is able to show authentic specimens, collected recently by careful scientists.*

Felder’s *Ch. demonax* is identical with *affinis* and not a *var.*, as Dr. Butler says (*l.c.*); Felder’s *parmenion*, erroneously said by Dr. Butler (*l.c.*) to be a synonym of *latona*, is also *affinis*, but differs from the average specimen of *affinis* in the anal angle of the hindwing being more produced, and in the second tail being scarcely indicated.

The *males* of *affinis* are easily distinguished from all more western species by the black admarginal line of the hindwing and the structure of the penis; from *latona*, moreover, by the pattern; the *female* resembles somewhat the *female* of *latona*, but the spatulate upper tail, the extremely short second tail, and the different position of the discal lunules of the *upperside* of the forewing and of the discal and postdiscal lunules of the *underside* of the hindwing are characters by which *affinis* can readily be recognised.

A ♂ in the Tring Museum without locality, but clearly belonging to *affinis* according to pattern and penis, has all the tawny postdiscal interspaces of the forewing vestigial, the specimen somewhat resembling in this character *Ch. aristogiton*.

* Professor Kükenthal seems to have bought up a great many of the Lepidoptera recorded by Dr. Pagenstecher, *l.c.*; the list furnishes illustrations of what we said above, and should be used with caution.

*b*⁵. ♂, hindwing above with the admarginal line feebly marked, tawny, or, if black, interrupted at the veins, penis without a lateral patch of teeth or this patch is on the left side; ♀, postdisco-admarginal patches of forewing above more or less merged together, at least the upper ones.

*a*⁹. ♂, postdiscal tawny interspace R^2-R^3 of forewing above at least as large as the black (or tawny) bar standing at its proximal side, or the tawny interspaces R^1-M^2 small but present and both tails developed; ♀, discal bar R^1-R^2 of forewing above not much heavier than posterior discal bars, much closer to outer margin than to median bar R^1-R^2 , or, if heavy, the hindwing with two tails and the median interspaces SC^5-R^2 not black. *Marmar* group.

5. *Charaxes distanti*.

Charaxes distanti Hourath, *Berl. Ent. Zeitschr.* XXIX. p. 277 (1885) (Perak; Borneo); Dist., *Rhop. Mal.* p. 434. n. 12. t. 36. f. 2, ♂ (1886); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 398. n. 143 (1896) (Borneo); Hagen, *Iris* IX. p. 187. n. 251 (1896) (N.E. Sumatra).

Charaxes (Haridra) distanti, Nicéville & Martin, *Journ. As. Soc. Beng.* LXIV. 2. p. 438. n. 265 (1895) (N.E. Sumatra; Middle Tenasserim).

♂ ♀. *Underside* of palpi, and middle of pro- and of anterior portion of mesosternum, almost pure white; sides of sterna of the colour of the wings; underside of abdomen often slightly paler.

♂. *Wings, upperside*: markings tawny, not black, which gives the wings a uniform appearance.—Forewing: median bars R^2-M^1 mostly marked, bar R^2-M^1 mostly angle-shaped, bars SC^5-R^2 heavier, darker, the upper of the two oblique, forming an angle-shaped spot together with the streak-like bar SC^4-SC^5 ; discal bars luniform, the posterior ones often ill-defined, washed out, lunule R^3-M^1 7 to 9 mm. from edge of wing (between veins), upper bars widened basad and also more or less broadly connected along the veins with the brown postdisco-submarginal patches; of the latter the middle ones often reach the edge of the wing, patches R^3-SM^2 about as wide as, or smaller than, the interspaces between them and the discal lunules.—Hindwing: outer area from edge of wing as far as the postdiscal bars, which shine through from below, darker tawny orange than the rest of the wing, costal margin somewhat whitish; median bar $C-SC^2$ straight, or slightly arched, often faintly marked, median bar SC^2-R^1 mostly absent, sometimes vestigial; postdisco-submarginal patches all small, the postdiscal portions (proximal of the white dots) obliterated, except between C and R^2 where they are more or less clearly marked, sometimes nearly all the patches reduced to minute spots, the last two dots more black than the others; admarginal line separated into lunules, mostly rather clearly defined, seldom shadowy; tails reduced to short teeth.

Underside varying from orange ochraceous rufous to yellowish ochraceous; bars tawny or ochraceous tawny, postdiscal series of hindwing mostly slaty black.—Forewing: costal margin to a little beyond apex of cell white; basal dot of cell absent, cell-bar 3 never entire, broken up into dots, the dots, however, often all fused together, sometimes the posterior dots obliterated, the bar, if nearly entire, heavier than the other cell-bars, cell-bar 4 often straight, reaching M at or before, never distally of, point of origin of M^1 ; median bars R^2-SM^2 stand in an oblique, almost continuous, series, bar R^2-R^1 exactly (or almost) in front of bar R^3-M^1 ; the discal interspaces narrowing behind: white submarginal scaling band-like, the

apical patches often much smaller than those towards internal angle.—Hindwing : the two cell-bars converging in front, here often fused together ; the upper post-discal bars are linniform, more or less completely fused to a nearly straight band ; white submarginal dots all prominent.

♀. Like ♂, larger, the disc of the wings very slightly paler, the postdiscal-submarginal spots and the white submarginal dots of the hindwings larger, the admarginal interspaces of the hindwing below more wax-yellow ; tails as short as in ♂.

Length of forewing : ♂, 41—46 mm.

“ “ “ ♀, 52 mm.

Hab. Tenasserim and Sumatra to Borneo. In the Tring Museum from : Dawnat Range, Tenasserim, March 1895 (Hauxwell), 1 ♂ ; Perak, 1 ♂, 1 ♀ (Kiuta distr., coll. by Mr. Goldham) ; N.E. Sumatra, 9 ♂♂ : Selesseh, January, April, May, June, August (Dr. Martin) ; Bunguran, Natuna Islands, 2 ♂♂ (Hose, July—September 1894) ; Borneo, 10 ♂♂ : Lawas, April 1892 (A. Everett), Mt. Dulit, February and March 1894 (Hose), Kina Balu, Pengaron (S.E. Borneo).

A ♀ from Borneo in Mr. Grose Smith's collection.

The Bornean ♂♂ have the underside more tawny than the specimens from Sumatra, Perak and Tenasserim ; one only of the Bunguran ♂♂ agrees in this respect with the Bornean ones, the other being paler. Specimens that have been on the wing for a longer time have the underside apparently paler than fresh ones.

The Tenasserim example in the Tring Museum is the smallest of all specimens we possess of the species ; the discal lunules of the forewing are very obscurely marked, washed out (as they sometimes are in Bornean specimens), the admarginal line of the hindwing is also very indistinct, and the tawny submarginal spots are minute.

Dr. Hagen (*l.c.*) received about a dozen specimens from his collectors who brought them from the Gajo country, while Dr. Martin (*l.c.*) found it “in the forests of the plains, at Paya Bakong and Selesseh, perhaps not higher than Namoo Oekor.”

6. *Charaxes kahruba*.

Charaxes (Haridra) lunawara, Doherty (*non* Butler, 1872), *Journ. As. Soc. Beng.* LV. 2. p. 124. n. 96 (1886) (Kumaon) ; Wood-Mas. & Nicéw., *ibid.*, p. 363. n. 103 (1887) (Cachar, July) ; Nicéw., in Risley, *Gazetteer of Sikkim* p. 148. n. 235 (1894) (Sikkim).

Charaxes lunawara, Nicéville, *Bull. of India* II. p. 282. n. 572 (1886) (Kumaon ; Sikkim ; N.E. Bengal ; Cachar) ; Elwes, *Trans. Ent. Soc. Lond.* p. 368. n. 213 (1888) (Sikkim) ; *id.*, *Proc. Zool. Soc. Lond.* p. 284 (1891) (Karen Hills, Burma).

Haridra lunawara (!), Swinhoe, *Trans. Ent. Soc. Lond.* p. 289. n. 195 (1893) (Khasia Hills).

Haridra kahruba Moore, *Lep. Ind.* II. p. 235. t. 171. f. 1. 1a. 1b. 1c. ♂, ♀ (1896) (Sikkim ; Assam ; Burma ; Tenasserim).

Charaxes kahruba, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 398. n. 141 (1896) (Sikkim ; Bhutan ; Assam ; Burma).

Differs from the allied species constantly in a number of characters, and is most easily recognised by the strongly pronounced markings of the underside.

♂. *Wings, upperside*.—Forewing : discal halfmoons R²—M² sharply defined, black or dark tawny, the upper discal bars SC¹—R² much heavier, bars SC¹—R¹ joined along veins to the black border of the wing ; postdiscal, halfmoon-shaped interspaces slightly deeper in tint than the middle of the wing, the upper three smaller than the others, interspace SC⁴—SC⁵ isolated, more or less elongate, never

absent; admarginal tawny orange interspace M^2-SM^2 always well marked, sometimes connected along (SM^1) with the postdiscal interspace, the other admarginal interspaces vestigial *between* veins; median bars SC^5-R^2 generally rather heavy, black, seldom tawny.—Hindwing: submedian bar $C-SC^2$ present, though not heavy: median bar $C-S^2$ always conspicuous, oblique, slightly S-shaped; postdisco-submarginal black patches with the white dots generally obsolete, the dots, if better marked, of a buffish-colour, not pure white, patch SC^2-R^1 at least twice the size of patch $C-SC^2$, veins C and SC^2 often black near these patches, the following three patches, rhomboidal, well separated from one another: marginal tawny line more clearly defined than in the allies of *kahruba*: edge of wing dentate, upper tail 3 to $3\frac{1}{2}$ mm.

Underside maize yellow, this colour strongly contrasting with the russet-tawny colour of the median interspaces R^2-M^2 of forewing, of all the median interspaces of hindwing, the postdiscal interspaces of the hindwing and of the small triangular patches at the proximal side of the discal lunules of fore- and hindwing.—Forewing: basal cell-spot always present, heavy; cell-bar 3 heavy, sometimes interrupted; bar D very heavy; subbasal bar $M^2-(SM^1)$ sometimes vestigial; submedian bar M^1-M^2 just behind point of origin of M^2 , or more distal, bar R^2-R^1 barely 1 mm. distant at R^3 from bar D, often fused with the latter behind; median bar M^1-M^2 angle-shaped, bar R^3-M^1 much more distal, the median interspace M^1-M^2 barely half the width of median interspace $M^2-(SM^1)$; postdiscal interspaces R^1-SM^2 with rather large tawny patches; brown, postdiscal, short streaks upon internervular folds, followed by white scaling which is distally limited by a brown line, of which the partitions between veins are not obviously uniform.—Hindwing: subbasal interspaces more or less tawny russet; submedian interspaces partly of the same colour, but a spot in cell at cell-bar 4 and interspaces $CM-SC$ maize-colour; basal costal bar closer to PC than in the allied species, long, S-shaped, basal cell-spot marked in all specimens: subbasal, submedian and median bars heavy, but costal subbasal bar mostly absent, seldom vestigial; cell-bar 3 represented by a black dot, which is sometimes absent; subbasal, submedian and median bars $M-(\text{resp. } M^2)-SM^3$ form continuous zigzag lines; a black line upon SM^2 between submedian and median bars, another at base of abdominal margin of wing: median bar R^3-M^1 much more distal than the lower end of bar R^2-R^3 and upper end of bar M^1-M^2 ; postdiscal interspaces russet tawny except at discal lunules: postdiscal bars black, arrowhead-shaped; admarginal interspaces wide, maize-colour; marginal, tawny, line sharply defined, scarcely thinner near veins than between.

♀. Differs from the allied species in the same way as the ♂ does.

Wings above somewhat paler on disc than in ♂.—Forewing: discal lunules SC^4-R^2 not much heavier than the others; postdisco-submarginal patches more or less indistinctly separated from one another, the veins between them being tawny; admarginal tawny interspaces more obvious than in ♂, at and *between* veins; median bar R^3-M^1 more distal than in the allied species, bar R^2-R^3 more proximal.—Hindwing: the white submarginal dots within the black postdisco-submarginal patches all developed, the middle one rather strongly angle-shaped: dark tawny marginal line broader than in ♂: upper tail $8\frac{1}{2}$ to $10\frac{1}{2}$ mm.

Underside as in ♂, but the forewing has the middle discal lunules somewhat more proximal, and the postdiscal interspaces much less variegated with tawny russet.

Length of forewing : ♂, 41—45 mm.

” ” ” ♀, 47—56 mm.

The penis is very strongly denticulate (Pl. VIII. f. 4), the number of teeth is large ; they stand in an irregular double or treble series which widens out proximally into a sinistral-lateral patch ; penis-funnel long and slender.

Hab. Kumaon to Tenasserim. In the Tring Museum 17 ♂♂, 9 ♀♀ from : Sikkim, the Khasia, Naga, and Garo Hills.

The species is rarer than *Ch. marmar*. It was generally considered to be *lunawara*, until Moore pointed out that *lunawara* was nothing else but *marmar*. In Sikkim it is met with at lower elevations. Doherty found it to be rare in the Lower Kali valley, Kumaon.

7. *Charaxes marmar*.

Charaxes marmar Westwood, *Cat. Or. Ent.* p. 43. t. 21, ♂, ♀ (1848) (Assam ; Sylhet) ; Butl., *Proc. Zool. Soc. Lond.* p. 636. n. 57 (1865) (Assam ; Silhet) ; Moore, *ibid.*, p. 831 (1878) (Moolai, Upp. Tenasserim, 3—6000 ft.) ; Nicév., *Butt. of India* II. p. 281. n. 571 (1886) (Sikkim ; Assam ; Sylhet ; Upp. Tenass.) ; Elwes, *Trans. Ent. Soc. Lond.* p. 368. n. 212 (1888) (Sikkim) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 398. n. 140 (1896) (Darjiling ; Silhet ; Khasia Hills ; Buxa ; Mungphu ; East Pegu).

Nymphalis marmar, Doubleday, Westwood & Hewitson, *Gen. Diurn. Lep.* II. p. 309. n. 37 (1850) (Silhet ; Assam) ; Horsf. & Moore, *Cat. Lep. Mus. E. I. Comp.* I. p. 206. n. 422 (1857) (Darjiling ; Cherra Punji).

Nymphalis polyzeus var. *k. C. marmar*, Kirby, *Cat. Diurn. Lep.* p. 272. sub n. 52 (1875) (Ind. bor.). *Charaxes lunawara* Butler, *Lep. Exot.* p. 99. t. 37. f. 2, ♂ (1872) (N.E. Bengal ; ♀ = *anyceus carolus*).

Nymphalis (Haridra) marmar, Wood-Mason & Nicéville, *Journ. As. Soc. Beng.* LV. p. 306. n. 102 (1887) (N. Cachar, Silcuri, June—July) ; Nicév., in Risley, *Gazetteer of Sikkim* p. 148. n. 234 (1894) (Sikkim, April to October).

Nymphalis polyzeus var. *marmar*, Robbe, *Ann. Soc. Ent. Belg.* XXXVI. p. 130. n. 53 (1892) (Darjiling ; Kurseong).

Haridra marmar, Swinhoe, *Trans. Ent. Soc. Lond.* p. 289. n. 194 (1893) (Khasia Hills) ; Moore, *Lep. Ind.* II. p. 233. t. 170. f. 1. 1a. 1b. 1c. ♂, ♀ (1896) (Sikkim, Bhotan, to Tenasserim ; Mal. Pen.).

♂. *Wings above.*—Forewing : median bars SC^1 — R^1 midway between apex of cell and the respective discal bars, in the specimens which have the latter much enlarged a little nearer these black discal patches ; discal luniform bars R^1 — SM^1 tawny ochraceous, seldom blackish ; postdiscal tawny orange interspaces SC^1 — SC^5 sometimes very small, but apparently never quite replaced by black ; admarginal tawny line generally developed behind and near apex, much less in middle of margin, where the tawny colour appears often only at the tip of the veins, or is quite absent.—Hindwing : postdisco-submarginal patches very variable in size, the middle ones pointed externally, postdiscal portions of these smaller than submarginal ones, white submarginal dots sometimes absent, the second the last to disappear : marginal line indistinct ; tails short, upper one $1\frac{1}{2}$ to 4 mm., dentition of edge of wing sometimes feebly developed.

Underside pale ochre yellow, median interspaces R^2 — M^2 of forewing, all the median interspaces as well as the middle, submedian and subbasal ones of the hindwing more or less pale russet tawny.—Forewing : median interspace M^1 — M^2 half the width of interspace M^2 —(SM^1) ; median bar R^2 — R^3 more proximal than bar R^3 — M^1 , bar R^1 — R^2 touching R^2 midway between the median and discal bars R^2 — R^3 .—Hindwing : basal costal bar halfway between base of wing and PC, not reaching C ; no vestige of cell-bar 3 ; upper lunules of postdiscal series much less distinct

than the others ; marginal line indistinct or, at least, not conspicuous ; postdisco-submarginal interspaces glossy, pinkish buff or vinaceous buff ; discal interspaces not glossy.

♀. Discal interspaces of upper- and underside somewhat paler than in ♂ ; median bars of forewing *above* often patch-like, closer to cell than to discal bars ; discal bars more blackish than in ♂, the upper ones not (or little) heavier than the others. — Hindwing : white submarginal spot within postdisco-submarginal patches all developed, the upper one often obsolete, never larger than the second.

Underside : postdiscal slate-black bars of hindwing heavier than in ♂, the upper ones more uniform than the others ; tail 8 to 10 mm. long.

Length of forewing : ♂, 37—44 mm.

” ” ” ♀, 49—55 mm.

Penis with few teeth above, but with a lateral patch of teeth about 3 mm. from the apex (Pl. VIII. f. 5) ; penis-funnel long, slender, its extremity convex above.

Hab. Sikkim to Malacca and Tonkin. In Tring Museum 29 ♂♂, 15 ♀♀ from : Sikkim ; Khasia Hills ; Garo Hills ; Naga Hills ; Katha, Burma ; Theiping, Mal. Pen. ; Tonkin.

A common species at lower altitudes, occurring in Sikkim from April to October ; apparently not varying according to season.

8. *Charaxes aristogiton*.

Charaxes aristogiton Felder, *Reise Novara, Lep.* p. 444. n. 727 (1867) (*hab.* ?) ; Butl., *Trans. Ent. Soc. Lond.* p. 121. n. 18 (1870) (Sikkim) ; Nicév., *Butt. of India* II. p. 282. n. 573 (1886) (Sikkim ; Sylhet ; Upp. Tenasserim) ; Manders, *Trans. Ent. Soc. Lond.* p. 526. n. 93 (1890) (Shan States) ; Adams, *Cat. Butt. Burma* p. 20. n. 207 (1889) ; Nicév., *Journ. Bombay N. H. Soc.* V. p. 296. n. 50 (1890) (Chin Lushai) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 139 (1896) (Darjiling ; Upp. Tenasserim).

Nymphalis polyxena var. *C. aristogiton*, Kirby, *Cat. Diurn. Lep.* p. 273. sub n. 52 (1895).

Charaxes desa Moore, *Proc. Zool. Soc. Lond.* p. 832. (1878) (Moolai ; Upp. Tenass.).

Charaxes aristogiton (!), Elwes, *Trans. Ent. Soc. Lond.* p. 368. n. 214 (1888) (Sikkim).

Haridra aristogiton (!), Swinhoe, *ibid.*, p. 289. n. 196 (1893) (Khasia Hills).

Charaxes (Haridra) aristogiton, Nicéville, in Risley, *Gazetteer of Sikkim* p. 148. n. 236 (1894) (Sikkim) ; *id.*, *Journ. As. Soc. Beng.* LXVI. p. 552. n. 8. t. 2. f. 11. 12 (1897) (*syn. pro parte* ; gynandromorph. spec.).

Haridra aristogiton, Moore, *Lep. Ind.* II. p. 236. t. 173. f. 1. 1a (1896) (Sikkim ; Bhotan ; Naga Hills ; Sylhet).

Haridra desa Moore, *l.c.* p. 235. t. 172. f. 1. 1a. 1b. 1c. ♂, ♀ (1896) (Tenasserim : Moolai, Toungoo, Thoungyeen).

Haridra adamsoni Moore, *l.c.* p. 236. t. 173. f. 2. 2a. ♂ (1896) (Mepley Valley, Upp. Tenass., Feb.).

♂. *Wings, upperside*.—Forewing : discal bars R²—SM² brownish black, uniform, bars SC⁴—R² very heavy, fused with one another and with the postdisco-submarginal band, also prolonged basad along veins towards median bars SC⁴—R², which are sometimes reached ; postdiscal, tawny, halfmoon-shaped interspaces R¹—M² about half the breadth (or less) of the respective postdisco-submarginal patches, interspaces R¹—R³ much smaller, sometimes vestigial, interspace SC⁵—R¹ vestigial, or filled up with black, interspace SC⁴—SC⁵ very seldom vestigial ; edge of wing as in *marmax*.—Hindwing : postdisco-submarginal black spots C—R¹ fused together, sometimes extended to edge of wing, the vein between them very rarely tawny ; the white submarginal spots as in *marmax*, but the first on the whole larger and the last of the upper ones to disappear (while in *marmax* the second is the last to disappear).

Underside more or less uniformly pale vinaceous russet, the discal interspaces of the forewing and the discal and admarginal ones of the hindwing a little more clay-colour.—Forewing : interspace between median bars M^1-M^2 about one-third narrower than interspace between bars $M^2-(SM^1)$, median bar R^2-R^3 continuous with bar R^3-M^1 , not much more proximal (as it is in *marmax*), costal edge more or less obviously scaled white at base.—Hindwing : basal costal bar placed as in *marmax*; median bars R^2-M^1 continuous; rest as in *marmax*; discal interspaces glossy.

♀. *Wings, upperside*.—Postdiscal, tawny interspaces of forewing narrower than in *marmax*, especially the upper ones; the first white submarginal dot of the hindwing larger than the second.

Underside as in ♂; median bar R^1-R^2 of forewing much closer to median bar R^2-R^3 than to discal bar R^2-R^3 ; first and second white submarginal spot wider apart from the respective postdiscal slate-black bars than in *marmax*, the white spot $C-SC^2$ well marked, without blackish bar at distal side (the bar present in *marmax*).

Penis with rather heavy denticulation above, but without the lateral patch of teeth which is found in *marmax*; penis-funnel much shorter than in *marmax*, its upperside concave to tip.

Hab. Sikkim to Tenasserim. In the Tring Museum 21 ♂♂, 4 ♀♀ from: Sikkim; Khasia Hills, Naga Hills; Katha, Burma; S. Shan States, Siam frontier; Toungoo, April.

The specimens from Tenasserim have the discal bar R^1-R^2 thinner than the individuals from N. India, the bar not being much wider than the tawny postdiscal spot at its distal side; in these examples the black area is suddenly dilated in front, but the black scaling is not so much extended as in the North Indian individuals; the median bars SC^4-R^2 stand about midway between the cell and the black outer area in the Tenasserim specimens. In the *female* sex from the same country the discal bars SC^4-R^1 are much wider (according to Moore's figure) than in *females* from North India. Dr. F. Moore considers these Tenasserim specimens to be specifically distinct from *aristogiton*, and calls them *desa*. It is possible that *desa* represents, indeed, a geographical form of *aristogiton*. The penis and penis-funnel are as in *aristogiton*.

The specimens of *marmax* and *aristogiton* from North India are easily distinguished from one another by the colour of the underside of the wings, the shape of the penis-funnel and the denticulation of the penis; intergradations do not seem to occur either in Sikkim or Assam. From an examination of North Indian material only one must, therefore, necessarily arrive at the conclusion that *marmax* and *aristogiton* are two distinct species. But the matter becomes complicated, if one takes into consideration the specimens from the Shan States and Tenasserim. In these countries there occur, besides ordinary *aristogiton*, individuals which combine characters of *marmax* and *aristogiton*, specimens which, besides, vary *inter se* very much, and exhibit sometimes characters not found either in *marmax* or *aristogiton*. The following specimens (♂♂) of the size of our smallest *marmax* and *aristogiton*, or even smaller, are in the Tring Museum:

(1) A specimen from Muong Gnow, Shan States, caught in the second half of the year.

Wings, upperside.—Forewing : median bars SC^4-M^1 not marked; bar D

feeble, tawny ; discal bars R^2 — SM^2 feebly curved, closer to postdisco-submarginal patches than in *aristogiton*, fused with them at veins (except at SM^2), discal bars SC^4 — R^2 much enlarged, extending basad at veins to near the median bars which shine through from below in certain lights, postdiscal tawny spots smaller than in *aristogiton*, spot SC^4 — SC^5 absent, the following one vestigial, the third somewhat larger, the dark scaling separating it from the tawny orange area tawny brown between veins ; tawny admarginal spots obsolete, except the last, represented by some tawny scales *between* veins as in *kahruba*.—Hindwing : all the postdisco-submarginal spots separated from one another, the first like the second, $4\frac{1}{2}$ mm. long, with heavy white centres, the other spots all very much smaller, with white dots, admarginal line indistinct ; a trace of a wax-yellow spot at anal angle, found sometimes in *aristogiton*.

Underside as in *marmax*, the median interspaces less prominent ; median interspace M^1 — M^2 of forewing as wide as in *aristogiton*, upper tail $4\frac{1}{2}$ mm.

Penis as in *marmax*, but the lateral patch of teeth just indicated ; penis-funnel as in *marmax*.

Length of forewing : 38 mm.

(2) The same locality and time of the year as No. 1.

Wings, upperside.—Forewing : median bars SC^5 — M^2 feebly marked, bar D black costally ; discal bars and postdiscal tawny interspaces as in No. 1, but the upper interspaces somewhat larger and less shaded with brown, discal, patch-like, bar R^1 — R^2 black, not dark tawny between veins ; admarginal orange-tawny line well developed as in ordinary *marmax* and *aristogiton*.—Hindwing : as in No. 1, tail a little shorter, yellow spot at anal angle distinct, submarginal white dots a little smaller.

Underside of the tint of *aristogiton*, but admarginal interspaces of both wings as yellow as in *marmax*, discal interspaces also with a trace of the yellow colour of *marmax* ; median bar R^2 — R^2 of forewing and R^3 — M^1 of hindwing placed as in *marmax*, median interspace M^1 — M^2 of forewing as white as in *aristogiton*, submarginal, blackish, bar C— SC^2 of hindwing marked, but placed as far from the white submarginal dot as in *aristogiton*, cell-spot 3 of hindwing present (as in most specimens of *kahruba*).

Penis above denticulated as in *aristogiton*, but the lateral patch of teeth present ; penis-funnel as in *aristogiton*.

Length of forewing : 37 mm.

(3) A specimen from Chiengkong, S. Shan States, Siamese frontier, March (ex coll. Watson).

Wings, upperside.—Forewing as in No. 2, but median bars more distinct, discal bar R^1 — R^2 as in No. 1, and postdiscal tawny spot SC^4 — SC^5 present, postdisco-submarginal, black, patches somewhat heavier, orange-tawny line obsolete in middle. —Hindwing with the postdisco-submarginal patches larger than in Nos. 1 and 2, the upper two not separated, the others touching one another (except the last three), white dots C— R^1 obscure, the following four absent ; edge of wing less sharply dentate than in Nos. 1 and 2.

Underside as in *aristogiton* ; tail short, 2 mm. long.

Penis and penis-funnel as in *aristogiton*.

Length of forewing : 37 mm.

(4) A specimen from the Salween Valley, N. Shan States, 3000 ft. (ex. coll. Watson).

Wings, upperside.—Forewing as in *marmax*, median bars SC^5-R^2 very thin. —Hindwing: postdisco-submarginal patch $C-SC^2$ with white dot, the following without white dots, second patch one-fourth larger than the first, patches R^1-M^2 gradually diminishing in size.

Underside as in *aristogiton*, median bar R^2-R^3 of forewing closer to cell, admarginal region of hindwing more yellow; upper tail short, very broad at base, second tail scarcely indicated, dentition of wing obsolete.

Penis with some lateral teeth, dorsal teeth as in *marmax*, penis-funnel as in *aristogiton*.

Length of forewing: $35\frac{1}{2}$ mm.

(5) A specimen without locality agrees with No. 4, it has, however, the outer edge of the forewing more extended tawny yellow, the underside a little more variegated with yellow; cell with dot 3 present. Penis feebly denticulated above, without lateral patch of teeth, penis-funnel as in *aristogiton*.

(6) A specimen labelled "Shan States?" has the median bars of the forewing *above* well-marked; the discal interspaces are paler than in *marmax* and *aristogiton*; postdiscal tawny orange spots and discal bars as in *aristogiton*, but tawny spot SC^4-SC^5 marked, margin all black, except before SM^2 , the tawny colour faintly vestigial between veins. The postdisco-submarginal patches all large as in No. 3, second only with a distinct white dot.

Underside as in No. 2, but admarginal interspaces less yellow; tail short, dentition not obsolete.

Penis nearly as in *marmax*.

Length of forewing: 39 mm.

Moore's *adamsoni* is based upon a single specimen from the Mepley Valley, Upper Tenasserim, resembling specimen (2); the tawny interstitial spots SC^5-R^2 of the forewing above are completely isolated, the black postdisco-submarginal patches $C-R^1$ of the hindwing have no white centres and spots R^1-SM^2 are minute.

9. *Charaxes harmodius*.

Charaxes harmodius Felder, *Reise Novara, Lep.* p. 445. n. 726 (1867) (Java); Fruhstorf, *Ent. Nachr.* XXIV. p. 57 (1898).

Charaxes scylax, Butler (non Felder, 1867), *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 137 (1896) (Java).

Charaxes (Haridra) aristogiton, Nicéville, *Journ. As. Soc. Beng.* LXVI. 2. p. 552. n. 8 (1897) (*partim*).

♂. *Wings above* similar to those of *Ch. marmax*.—Forewing: discal luniform bars R^2-SM^2 thin, the posterior ones often obsolete, bars SC^4-R^2 varying in width, the uppermost one often completely fused with the postdisco-submarginal patches; postdiscal interspaces SC^2-SM^2 always developed, the posterior ones wider than the black postdisco-submarginal patches, interspace SC^4-SC^5 mostly filled up with black; of the postdisco-submarginal patches patch R^1-R^2 obviously smaller than patches SC^5-R^1 and R^2-R^3 , all the patches separated from edge of wing, but the middle ones often extending very close to it; middle of wing paler than basal area. —Hindwing: median bar $C-SC^2$ or bars $C-R^2$ black, bar R^2-R^3 seldom vestigial; submedian bar $C-SC^2$ black or brown, at least vestigial; postdisco-submarginal patch $C-SC^2$ not, or not much, smaller than the following patch, the

other patches very variable in size, often touching one another, sometimes well separated, pointed distally, the submarginal portions black, the postdiscal portions brown, sometimes obsolete, centre-parts brown; white submarginal spots in most specimens conspicuous, especially the upper two, spot C—SC² never absent, large.

Underside tawny cinnamon rufous or ochraceous, the glossy parts with purplish reflections, the discal interspaces of the same tint as the postdiscal ones, but more or less glossy, not paler.—Forewing: discal lunules more proximal than in the allied *aristogiton* and *marmax*, the discal interspaces often narrower than the darker median ones; discal bars black, at least the posterior ones; median interspace M¹—M² nearly as wide as median interspace M¹—SM², or about one-third narrower.—Hindwing: glossy all over, except postdiscal and submarginal interspaces, discal luniform bars black, placed as in *marmax*, lunule SC²—R¹ being more proximal than the one before it; submarginal white dots seldom minute or obsolete, the first never absent, the black submarginal dots C—R¹ seldom indicated; the glossy postdisco-submarginal band as broad as in *aristogiton*, the section C—SC² wider than in *marmax*; admarginal line thin; last discal lunule turning round, at anal angle, to join the admarginal line; upper tail 2 to 5 mm. long, second a short tooth.

♀. Resembling the ♀ of *aristogiton*.

Upperside: disc in the Palawan form very pale.—Forewing: postdiscal interspaces nearly as broad as in *marmax*, except upper ones, which are as in *aristogiton*; discal bars SC⁴—R¹ either fused with postdisco-submarginal patches, or isolated, and then bar SC⁴—SC⁵ not more proximal than bar SC⁵—R¹; postdisco-submarginal patch R¹—R² considerably smaller than patch SC⁵—R¹.—Hindwing as in *aristogiton*, upper two submarginal dots always large; central and postdiscal portions of postdisco-submarginal patches more or less obviously brown.

Underside either as in ♂, with the proximal parts of the discal interspaces, especially of the forewing, buffish, or much paler than ♂, except median interspaces, which are darker, the discal interspaces entirely buff-colour; upper two white submarginal spots of hindwing large; upper tail spatulate, about 8 mm. long, second a blunt but prominent tooth.

Length of forewing: ♂, 40—44 mm.

 " " " ♀, 45—51 mm.

Penis and penis-funnel as in *aristogiton*.

Hab. Java, Sumatra, and Palawan; not yet known from Borneo, nor from the Malay Peninsula, where the species most likely occurs.

The forms united here under *harmodius* are evidently the insular representatives of the Indian *Ch. aristogiton*. We should not hesitate in treating *aristogiton* as a subspecies of *Ch. harmodius*, if it were quite beyond doubt that *Ch. marmax* (which name is older than *harmodius*) is specifically distinct from *aristogiton*.

For the present, we consider it more opportune to keep *harmodius* specifically apart, feeling the more justified in doing this as there are no intergradations between *aristogiton* and *harmodius* known. Such intergradations can be expected to occur in the Malay Peninsula, where as yet no representative has been obtained.

Ch. harmodius has generally been overlooked or misidentified by entomologists. Herr Fruhstorfer (*l.c.*), drawing attention to the species in a note entitled: "Ein arg verkannter Charaxes aus dem Malayischen Archipel," shortly criticises Standinger, Semper, Nicéville, and Hagen; but unfortunately he makes himself a mistake in maintaining that the specimens from Java, Sumatra and Palawan are identical.

There is no difficulty whatever in distinguishing the three subspecies from these three islands.

a. Ch. harmodius harpagon.

Charaxes marmax Westw. var. *harpagon* Staudinger, *Iris* II. p. 85 (1890) (Palawan).

Charaxes marmax var. *harpagon*, Semper, *Tagf. Philipp.* p. 336. n. 520 (1892) (Palawan).

Charaxes harmodius, Butler (non Felder, 1867), *Journ. Linn. Soc. Lond.* XXV. p. 398. n. 142 (1896) (Palawan; "harpagon manuscript name" *ec errore*!!); Fruhst., *Ent. Nachr.* XXIV. p. 57 (1898) (Palawan).

Haridra harpagon, Moore, *Lep. Ind.* II. p. 247 (1896) (Palawan).

♂. *Wings, upperside.*—Forewing: median bars SC^5-R^2 marked; discal luniform bar SC^5-R^1 much thinner than the tawny postdiscal spot at its outside, bar SC^4-SC^5 fused with the postdisco-submarginal patch, smaller than in the other subspecies, the black colour not extending so much proximad, tawny postdiscal spot SC^4-SC^5 sometimes vestigial.—Hindwing: white submarginal dots $C-R^1$ larger than in *h. martinus* and *h. harmodius*, central portion of the black patches in which these dots are situated more or less tawny; median bar SC^2-R^1 present.

Underside ochraceous, with the median interspaces darker, bars faintly edged with white.—Forewing: white submarginal scaling forming two triangular patches at apex of wing; and thin dashes upon the folds between veins SC^5-SM^2 .—Hindwing: postdiscal interspaces $C-R^1$ very wide, discal and postdiscal bars SC^2-R^1 5 to 6 mm. distant from one another, distance between bars R^3-M about 3 mm.; postdiscal bars indistinct, tawny, not black.

♀. *Wings above*: discal interspaces creamy or yellow-buff.—Forewing: discal band limited proximally by the median bars; median bars SC^5-R^2 very much closer to cell than to discal lunules; discal lunule SC^4-SC^5 just in front of lunule SC^5-R^1 , not more proximal, sometimes very faint, tawny like the other lunules, not widened out basad, lunule SC^5-R^1 thin, not being heavier than the other lunules.—Hindwing: median bars $C-R^1$ heavy, bar R^1-R^2 also present as a short oblique line; discal band outwardly limited by faint indications of discal lunules; upper tail strongly spatulate.

Underside much paler than in ♂, median interspaces brown, discal ones buff, outer region more or less ochraceous; postmedian bars of hindwing darker brown than in ♂.

Length of forewing; ♂, 40—42 mm.

" " " ♀, 51 mm.

Hab. Palawan, 4 ♂♂, 2 ♀♀ (Dr. Platen).

This form reminds one by the pale tint of the upper- and underside of *Ch. marmax*, of which Staudinger considered it to be a variety.

b. Ch. harmodius martinus Rothsch., subsp. nov.

Charaxes marmax Westw. var. *harpagon* Staudinger, *Iris* II. p. 85 (1890) (Sumatra; non Palawan).

Charaxes (Haridra) aristogiton, Nicéville & Martin (non Felder, 1867), *Journ. As. Soc. Beng.* LXIV. 2. p. 438. n. 264 (1895) (N.E. Sumatra); Nicév., *l.c.* LXVI. 2. p. 552. n. 8 (1897) (partim; Sumatra).

Charaxes aristogiton, Hagen, *Iris* IX. p. 187. n. 250 (1896) (Karo, N.E. Sum.).

Charaxes harmodius, Fruhstorfer, *Ent. Nachr.* XXIV. p. 57 (1898) (pt.; Sumatra).

♂. *Wings, upperside.*—Forewing: median bars SC^5-R^2 both strongly marked; discal bar SC^5-R^1 thinner than the tawny postdiscal spot at its distal side.—Hindwing: median bar SC^2-R^1 black like bar $C-SC^2$, bar R^1-R^2 vestigial.

Underside: tawny cinnamon rufous, sometimes approaching in tint the preceding subspecies; bars conspicuously edged with white; white submarginal scaling prominent on forewing; postdiscal interspaces of the hindwing (outside the discal lunules nearly as broad as in *harpagon*, discal and postdiscal bars SC^2-R^1 being about 5 mm. distant from each other, interspaces R^2-SM^2 gradually becoming thinner, interspace R^3-M^1 about three times as wide as interspace M^2-SM^2 ; postdiscal bars black, heavy, standing in an almost straight line, upper ones more obviously luniform than the others.

♀. Unknown; most likely similar to ♂, with the discal interspaces of *underside* paler and the tail longer.

Length of forewing: ♂, 40—42 mm.

Hab. Sumatra. In the Tring Museum, 4 ♂♂ from the Bettak Mountains, February, March, April, May, June, July (Dr. Martin); Gayoe Mountains, January, May (Dr. Martin); Karo, January, September (Dr. Hagen).

Herr Ernhstorfer maintained (*l.c.*) that the Sumatra examples of *harmodius* were absolutely identical with those from Java; in this he was wrong. We did not find it difficult to distinguish all the Sumatran individuals that we have seen from an equally long series of Java examples by the black discal bar SC^5-R^1 of the forewing above being thinner than the tawny interstitial patch at its outer side.

Martin's collectors found this insect only at higher elevations from Bekantschan to the Central Plateau; it is not very common (*l.c.*).

e. *Ch. harmodius harmodius*.

Charaxes harmodius Felder, *Reise Novara, Lep.* p. 445. n. 726 (1867) (Java); Butl., *Trans. Ent. Soc. Lond.* p. 121. n. 17 (1872); Fruhst., *Sitz.-Ber. Berl. Ent. Zeitschr.* p. 12 (1895) (Java); id., *Ent. Nachr.* XXIII. p. 236 (1897) (Java; descr. of ♀!); id., *Berl. Ent. Zeitschr.* XLI. p. 301 (1897) (Java); id., *Ent. Nachr.* XXIV. p. 57 (1898) (pt.; Java).

Charaxes scylax Butler (non Felder, 1867), *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 137 (1896) (Java).

♂. Resembles *h. martinus*, but differs as follows:

Upperside.—Forewing: median bar R^1-R^2 faint, discal bar SC^5-R^1 developed to a large black patch which is at least twice as wide as the tawny postdiscal spot at its distal side, discal bar SC^4-SC^5 completely fused with postdisco-submarginal patch, the black colour more protruding proximad than in the other subspecies of *harmodius*, the interspace between median bar SC^5-R^1 and black disco-submarginal markings about one-half or one-third as wide as the interspace between that bar and the cell, while in *h. martinus* the bar stands about midway between cell and disco-submarginal patches, and in *h. harpagon* somewhat closer to cell than to discal lunules.—Hindwing: median bar SC^2-R^1 vestigial only, tawny or brown, not black.

Underside as in *h. martinus*, but postdiscal interspaces of hindwing narrower, the discal and postdiscal bars R^2-SM^2 especially close together, upper postdiscal bars in most specimens straight or almost so, seldom luniform.

♀. Similar to ♂.

Upperside: discal interspaces of forewing more yellowish than basal area of wing, discal lunules R^1-M^1 more blackish.—Hindwing: discal interspace $C-SC^2$ whitish, interspace SC^2-R^1 pale buff-yellow.

Underside: discal interspaces with buff patches at median bars; postdiscal black bars of hindwing heavier than in ♂; tail 7 mm. long, slightly spatulate.

Length of forewing : ♂, 40—44 mm.

” ” ♀, 45 mm.

Hab. Java. In the Tring Museum 9 ♂♂, 1 ♀ from : “Java”; Sukabumi, 2000 ft. (Fruhstorfer); Mount Gede, 4000 ft. (Prillwitz).

10. *Charaxes amycus*.

Charaxes amycus Felder, *Wien. Ent. Mon.* V. p. 303. n. 21, ♂ (1861) (Luzon); id., *Reise Novara*, *Lep.* p. 441. n. 719 (1867) (♂ Luzon; ♀ *spec. alt.*); Semp., *Taqf. Philipp.* p. 80. n. 101 (1887) (Luzon, Bohol, Camotes, Camiguin de Mindanao, Mindanao).

Nymphalis polyxena var. i. *C. amycus*, Kirby, *Cat. Diurn. Lep.* p. 272. sub n. 52 (1871) (pt.).

♂. *Wings above* richer tawny than in *marmax* and *aristogiton*, in the forms from Luzon and Mindoro somewhat shaded with olive.—Forewing : median bars SC⁵—R² mostly joined along veins to black outer area, which extends always to upper end of bar SC⁵—R¹ or farther basad ; discal bars R²—SM² very variable, dark tawny or black, the last one sometimes obsolete, bars SC⁵—R² always developed to patches, sometimes tawny brown, not black ; postdiscal tawny spots SC⁵—SM² always developed, the second and third sometimes very small, spot SC⁴—SC⁶ seldom faintly vestigial ; postdisco-marginal, purplish black, band extending to internal margin, the last partition often separated by the tawny vein SM², the other veins show some tawny scaling at ends, but there is never a tawny marginal line, not even at hinder angle.—Hindwing : postdisco-submarginal patches C—R¹ nearly all fused together to a band, or patches R¹—SM² isolated ; white submarginal dot C—SC² never quite absent, but often obscure, generally smaller than dot SC²—R¹ as in *Ch. marmax* ; admarginal line mostly very prominent, better marked than in *marmax* and *aristogiton* at least between veins.

Underside different in tint in the three subspecies, resembling on the whole that of *aristogiton* and *harmodius harpagon* ; discal interspaces of both wings glossy as in *aristogiton*.—Forewing : submedian and median bars R²—SM² on the whole more oblique than in the allies.—Hindwing : discal and postdiscal series of bars straighter than in *marmax* ; agreeing in this respect with typical *aristogiton* and *harmodius* ; median and submedian bars M²—SM² farther apart than in the allies ; tails very variable in length, in Mindanao individuals sometimes reduced to short teeth.

♀. *Wings, upperside* either tawny olive or nearly orange ochraceous.—Forewing : discal bars R²—SM² luniform, bar R²—R³ either also luniform or extended basad behind R², bars SC⁴—R² developed to patches, which are black or tawny, and are joined to the black outer area along veins ; median bars SC⁵—R² (seldom absent) closer to those patches than to apex of cell ; postdiscal interspaces orange ochraceous or cream-buff, all developed, but spot SC⁴—SC⁶ in the Mindoro form only vestigial ; discal interspaces filled up by a creamy buff or orange ochraceous band, which anteriorly extends basad to bar D and median bar R²—R³ ; veins within black marginal area more or less orange tawny, sometimes with orange tawny scaling between veins, or veins quite black.—Hindwing : disc very faintly paler in front than behind, median bars C—R² absent (but showing through from below), or the upper one vestigial ; white submarginal dots all present ; postdisco-submarginal patches R¹—SM² becoming gradually smaller, patch SC²—R¹ much larger, fused with patch C—SC².

Underside : creamy buff or buff yellow, median as well as outer portions of

discal interspaces more or less brown, but interspace between median bars SC^5-R^2 of forewing and cell of the same light colour as the discal interspaces.—Forewing: median bar R^3-M^1 midway between most proximal point of discal bar R^3-M^1 and base of M^1 or closer to the latter.—Hindwing: discal uniform bars $C-R^1$ evenly arched, not almost angle-shaped; discal interspaces $C-R^1$ twice as wide as the respective median interspaces; two tails, upper one spatulate, 7 to 9 mm. long, second curved costad, 6 to 7 mm. long.

Length of forewing: ♂, 34—39 mm.

” ” ♀, 42—48 mm.

Penis with a lateral patch of teeth as in *marmax*; penis-funnel, however, as broad as in *aristogiton*.

Hab. Philippine Islands, apparently on all the islands of the group.

The race from Mindanao is so different, especially in the ♀, from those found on Mindoro and Luzon, that we should have treated it as specifically distinct, if we had not a *male* specimen from Mindanao which resembles the Mindoro individuals more than the extreme Mindanao examples. Besides, *carolus*, *amycus* and *georgius* are clearly geographical representatives of one another; we must, therefore, expect that intergradations also between the *females* will be found when more material from all the islands of the Philippine group has come to hand.

Drs. Staudinger and Butler made a mistake in identifying the Mindanao insect with the form described by Felder, which came from Luzon. This erroneous identification misled Dr. Staudinger to describe the Mindoro form, which is very slightly different from that inhabiting Luzon, as a distinct species. Dr. Butler, in his revision of the genus *Charaxes*, brings the Mindoro race *georgius* in the “*psaphon* group,” while the Mindanao race stands under the name of *amycus* in the “*marmax* group.”

Ch. amycus connects the allies of *Ch. marmax* with those of *Ch. polyxena*.

a. *Ch. amycus carolus* Rothsch., subsp. nov.

Charaxes lunawara Butler, *Lep. Erot.* p. 99. n. 6. t. 37. f. 2, ♀ (1872) (no loc., ♀; ♂ = *marmax*).
Charaxes amycus, Semper (*non* Felder, 1867), *Taf. Philipp.* p. 80. n. 101 (1887) (Camiguin de Mind.; Mindanao; “Bohol,” “Camotes,” *haec* subsp. ?); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 397. n. 138 (1896) (Davao, S.E. Mindanao).

♂. *Wings above* rich tawny orange.—Forewing: median bars R^2-M^3 vestigial, the last often absent, or bars R^2-M^1 black, but short and thin and not curved, median bars SC^5-R^2 often tawny; discal bars R^2-SM^2 thin, often tawny brown, sometimes not arched, the last one often very faint.—Hindwing: postdisco-submarginal patches R^1-R^3 very much smaller than patches $C-R^1$, but in one example as in the following subspecies.

Underside: median bars R^2-M^1 of both wings continuons, or R^2-R^3 a little more proximal; postdiscal interspace SC^2-R^1 of hindwing about as wide as respective discal interspaces; tails very variable in length, upper one 2 to 4 mm., second $1\frac{1}{2}$ to $3\frac{1}{2}$ mm.

♀. *Wings above* orange ochraceous, discal area of forewing somewhat paler.—Forewing: median bars feeble, often vestigial only, sometimes absent; discal bars often all tawny, postdiscal interspaces of the same colour as disc, spot SC^4-SC^5 well marked; bar D sometimes vestigial only; veins within black postdisco-marginal area with orange ochraceous scaling.—Hindwing: postdisco-submarginal patches

R¹—M² isolated, pointed distally, their submarginal parts black upon internervular folds ; white submarginal dots somewhat linear, but not half so long as the cellules are broad, except the upper two.

Underside : lighter parts buff-yellow, this colour often occupying the greater part of the wings.—Forewing : median bars R²—M¹ continuous, or nearly so ; median interspaces M¹—SM² considerably narrower than the respective discal ones ; postdiscal, blackish, ill-defined, inconspicuous patches SC⁵—M² about one-third the way from the edge of the pale tawny orange marginal band to the discal lunules.—Hindwing : white submarginal dots C—R¹ larger than the others, all rather sharply defined ; postdiscal interspace SC²—R¹ very little smaller, or even larger, interspace C—SC² always larger, than the respective greyish postdisco-submarginal patches ; upper tail 8 to 9 mm. long, second 6½ to 7 mm.

Length of forewing : ♂, 36—39 mm.

 " " " ♀, 44—48 mm.

Hab. Mindanao (*type*) and Camiguin de Mindanao. In the Tring Museum 3 ♂♂, 1 ♀ from Mindanao ; several ♀♀ from Mindanao in Dr. Standinger's collection.

The specimens from Bohol and Camotes recorded by Semper as *amyceus* belong perhaps to this race, or may be intermediate between *carolus* and *amyceus* ; we have not seen any examples from those islands. We have no doubt that the individuals from Camiguin de Mindanao are *carolus*.

b. *Ch. amyceus georgius*.

Charaxes georgius Staudinger, *Iris* V. p. 262 (1892) (Mindoro) ; Semper, *Tafel. Philipp.* p. 335. n. 519 (1892) (pt. ; Mindoro) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 391. n. 121 (1896) (Mindoro).

♂. *Wings above* tawny orange, much shaded with olive brown.—Forewing : median bars SC⁵—M² strongly developed, the last of them seldom feeble, bar M¹—(SM¹) also developed as a rule, bars R³—M² luniform, bar R²—R³ very much nearer cell than bar R³—M¹ ; discal bars R²—SM² rather thin, black or brown, very much thinner than the tawny orange spots at their distal side ; black border of wing posteriorly broader than in the preceding subspecies, being between M¹ and M² three times as wide as the respective postdiscal, tawny orange interspace ; veins more or less black from cell to black area, especially in front.—Hindwing : postdisco-submarginal patches almost gradually decreasing in size abdominad, the upper four fused together or touching each other, patches R¹—M² pointed distally, sometimes produced to the admarginal line, which is conspicuous ; discal lunule C—SC² vestigial.

Underside : median bar R³—M¹ much more distal than bar R²—R³ on both wings ; postdiscal interspaces C—R¹ of hindwing very much smaller than the respective discal ones ; tails of about equal length, upper one 5 to 5½ mm., second 4½ to 5 mm.

♀. *Wings above* tawny olive.—Forewing : less falcate than in *carolus*, discal band and postdiscal spots creamy buff ; median bars R²—M² heavy, black, bars R³—M² more or less strongly luniform, bars SC⁵—R² much thinner, sometimes obsolete ; discal bars R³—SM² thin, but sharply defined, black or brownish black, strongly arched, bar R²—R³ also curved, but dilated basad behind R², bars SC⁵—R² developed to one large black patch which is about as wide at R² as at SC⁵, fused with the black outer area ; postdiscal creamy buff spot SC⁴—SC⁵ vestigial.—Hindwing : postdisco-submarginal patches larger than in *carolus*, close to the

admarginal, conspicuous line, the black scaling extending close to the discal lunule C—SC², which shines through from below, submarginal parts of patches deep black, this colour forming regular lunules or angle-shaped markings, central parts greyish, postdiscal parts of patches R¹—M² often obsolete; white submarginal spots larger than in *carolus*, longer than half the width of the cellules.

Underside creamy buff, variegated in the usual way with olive-brown; median bar R³—M¹ much more distal on both wings than bar R²—R³; white submarginal scaling on fore- and hindwing more extended than in *carolus*.—Forewing: postdiscal, brown, indistinctly defined patches R²—M² about midway between discal lunules and outer edge of white submarginal scaling, much more proximal than in *carolus*.—Hindwing: postdiscal interspace SC²—R¹ about half the size of the respective postdisco-submarginal glossy patch; black submarginal dots much closer to admarginal line than in *carolus*.

Length of forewing: ♂, 34—39 mm.

” ” ” ♀, 42—43 mm.

Hab. Mindoro. In the Tring Museum 6 ♂♂, 3 ♀♀ from: “Mindoro” (Platen); Mt. Dulangan, 4 to 5000 ft., November 1895 to January 1896 (J. Whitehead); low lands, November 1895 to January 1896 (J. Whitehead).

c. *Ch. amycus amycus*.

Charaxes amycus Felder, *Wien. Ent. Mon.* V. p. 303. n. 21, ♂ (1861) (Luzon); *Butl., Proc. Zool. Soc. Lond.* p. 636. n. 55 (1865) (Philipp.); *Feld., Reise Novara, Lep.* p. 441. n. 719 (1867) (Luzon ♂; not ♀ = *baya*); *Semp., Tagf. Philipp.* p. 80. n. 101 (1887) (pt., Luzon).

Charaxes antonius Semper, *l.c.* sub n. 100 (1887) (Guimaras ♀, *haec subsp.*?).

Charaxes georgius, Semper, *l.c.* p. 335. n. 519 (1892) (pt.; Polillo, Guimaras, *haec subsp.*?).

♂. Very close to *amycus georgius*, but the black colour of the *upperside* more extended.—Forewing: discal bars R²—M² heavy, wider than the tawny postdiscal spots, disc shaded at the base with brown; black marginal area at least as wide behind as in *georgius*.—Hindwing: postdisco-submarginal patches less pointed distally than in *georgius*, the upper five (or nearly all) fused together; disco-marginal area generally darker tawny than in the other two subspecies.

Underside on the whole somewhat darker than in *georgius*.

♀. Unknown.

Hab. Luzon. In the Tring Museum 4 ♂♂ from: “Luzon” (Lorquin, *type*); N. Luzon (J. Whitehead).

The specimen described as *amycus* ♀ by Felder was said to be from Celebes; it bears on the pin one of Felder's labels on which is written: “Celebes, coll. v. d. Capellen, *type*.” The specimen does not belong to *amycus*, nor is it from Celebes, but is an individual of the Javan *Ch. polyxena baya*. The ♀ from Polillo is, according to Semper, the same as *georgius*, but we have some doubt that this is so; a close comparison will most likely reveal similarly slight differences between the Polillo ♀♀ and those of *georgius* from Mindoro, as are found in the ♂♂ from Luzon (*amycus*) and Mindoro (*georgius*).

The Guimaras ♀ first recorded by Semper as a specimen of *antonius* is badly preserved; it represents perhaps a race intermediate between *amycus* and *carolus*, judging from the geographical position of the locality.

- b°. ♂, postdiscal tawny interspace R^2-R^3 of forewing smaller than the black patch at its proximal side, or absent; ♀, discal bar R^1-R^2 of forewing above much heavier than posterior discal bars, about midway between outer margin and median bar R^1-R^2 , or nearer the latter. *Polyxena* group.

The forms of *Charaxes* we are now going to deal with are more perplexing than any others. We can roughly divide them into two groups, according as the *males* have a white discal band on forewing, or not. On the islands of Palawan, Borneo and Sumatra, in the Malay Peninsula, and in China, there occur both a banded and a not-banded form without there being found any intergraduate specimens between the two. We must, therefore, conclude, for want of evidence showing the reverse to be true, that in those localities the two forms are perfectly independent of one another, or, in other words, belong to two distinct species. But if we examine the material from Burma and North India, we find no longer two well-separated forms, but meet with a great number of different-looking insects which entomologists have been at pains to describe as distinct species, but which are all connected with one another by intergradations. However, if we group the individuals again according to the presence or absence of a white discal band on the forewing of the *males*, we observe that the number of specimens which have the band more or less vestigial and connect the two groups of individuals completely is much smaller than the number of specimens of either group. We have vainly endeavoured to find characters in the sexual organs by which the forms could be constantly separated.

Have we then to deal with one, two or more "species" in North India and Burma? It might be suggested that the intergraduate specimens were hybrids. But that explanation is not admissible, (1) because the number of "hybrids" would be much too large, hybrids being rare, if not produced in confinement; (2) because the fact that no intergradates between the banded and not-banded forms of Sumatra and Borneo, whence large material has come to Europe, are known, speaks entirely against the Burmese and North Indian "species" hybridizing so freely. Hence we disregard this assumption of general interbreeding of "two species" altogether, and consider all the numerous forms known from Burma and N. India as specifically identical. Some authors have avoided the difficulty presented by the insects in question by picking out certain specimens as specifically distinct and including the intermediate examples arbitrarily into one or the other of those "species"; others preferred enumerating the insects as a dozen or more "species," but leaving it doubtful whether the "species" were all distinct. We agree with those who suggested, like Watson and Elwes, that the insects in question belonged all to one and the same very variable species. To clear up the matter entirely as regards the specific identity of the various Burmese and North Indian forms, it is necessary to rear the insects from the eggs of ♀♀ which have copulated with ♂♂ that are similar to them in colour. It would be a long step forward if one of the officers in Burma who takes an interest in Natural Science would try to obtain eggs from one ♀, rear the insects, and send the ♀, together with the offspring, carefully marked, to a public collection or to an expert.

There is one other point to be noted. The individuals which are intermediate between the banded and not-banded forms are mostly small specimens, being not only rarer, but on an average also decidedly less robust than the forms which approach the extremes in colour. Therefore, if it is true that we have to do only

with one variable, polychromatic, species, we may say that this species is in a process of being evolved into a dimorphic species by the elimination of the intermediate links. But it is surely futile to speculate any further on this subject, before we know precisely the life-history of the insects.

However, by uniting the various North Indian and Burmese examples to one species, we create another difficulty, respecting the Chinese and Malayan forms. For if we assume, as we are bound to do with our present incomplete knowledge, that forms like *khasianus* and *corax* are the same species, it would only be consistent to regard also the banded and not-banded specimens from Sumatra, Borneo, etc., as individuals of a dichromatic species. This, however, we cannot do, as regards the Malayan insects, because the banded Malayan forms are all well-defined, being, so far as we know, constantly different from the Indian banded individuals, while the not-banded extra-Indian individuals are in the *male* sex not always distinguishable from the Indian not-banded specimens. Therefore we think it justifiable to treat the Malayan banded forms as specifically distinct, whereas we must include the forms with not-banded ♂♂ in the same species to which the various banded and not-banded Indian forms belong. The Chinese banded and not-banded *males* we consider also to be specifically identical; it is true, there is no complete chain of intermediate specimens known, but the material in collections is so scanty and shows yet so much variability that the course we adopt is the best to follow at present.

The South Indian and Ceylonese *Ch. psaphon* is only a geographical offshoot of the species under discussion, but we treat it nevertheless as a distinct species, because it is apparently always well distinguishable in both sexes from all other forms. *Ch. psaphon* is, moreover, in so far of particular interest as the ♂ is not-banded, while the ♀ agrees to a certain extent better with the ♀♀ of the banded than with those of the not-banded forms, and might therefore be called a representative of the banded as well as of the not-banded Malayan species. It is, however, possible that a larger material from the North-West Himalayas and Nepal of the form called *hemana*, of which we have seen only a few individuals, will contain gradations from *hemana* to *psaphon*, in which case *psaphon* will sink as a subspecies of the variable Indo-Malayan *Ch. polyxena*.

11. *Charaxes polyxena*.

- ♀. *Papilio Eques Achivus polyxena* Cramer, *Pap. Exot.* I. p. 85. t. 54. f. A.B. (1775) (China; ♀, mutilated).
 ♀. *Papilio Eques Achivus bernardus* Fabricius, *Ent. Syst.* III. 1. p. 72. n. 223 (1893) (China) (1775) (China, ♀).

♂. *Wings, upperside*.—Forewing: black outer area broad, at least in front, the black discal lunules merged together with it, but lunules M^1 — SM^2 sometimes almost separate, occasionally obsolete; postdiscal tawny or white interspace M^2 — SM^2 seldom filled up with black scaling, the other postdiscal interspaces often also more or less marked, but interspace R^2 — R^3 always very much smaller than the discal portion R^2 — R^3 of the black area at its proximal side, and situated halfway between median bar R^1 — R^2 and outer margin of wing; discal interspaces varying from being bluish white to being concolorous with the basal area.—Hindwing less dentate than in *marmax* and allies, tooth M^2 less prominent.

Underside: discal bars SC^4 — SC^5 of forewing about a third the way between

median bars and outer margin of wing, being like the other median bars much more proximal than in *marmax* and allies.

♀. *Wings, upperside*.—Forewing: black discal bars R^3 — SM^2 more or less thin, arched, joined at veins to the black postdisco-marginal band; postdiscal interspace R^1 — R^2 a third the way between outer margin and median bar R^1 — R^2 , more distal than spot R^2 — R^3 , generally smaller than the black discal patch standing at its proximal side, but occasionally larger, buffish or white like the other postdiscal interstitial spots and the discal band, discal bars SC^3 — R^2 very much heavier than bars R^3 — SM^2 , mostly merged together with the black outer area except for postdiscal interstitial spots SC^4 — R^2 or SC^5 — R^2 .

Underside: discal bars SC^4 — R^2 of forewing very much nearer the median bars than outer margin.

Length of forewing: ♂, 32—48 mm.

” ” ♀, 43—58 mm.

The denticulation of the penis is individually variable; in the more robust specimens the teeth are generally heavier than in the smaller specimens and more numerous before the apex standing here mostly in two irregular rows.

Hab. From N.W. India to China, Palawan and Java.

The *Charaxes* figured by Cramer, *l.c.*, from China, is doubtless a *female* of this species with the tails broken off; and Fabricius's *bernardus* is also this species, as the description and Donovan's figure prove. Moore, in *Lep. Ind.* II. p. 246, refers the name of *bernardus* to a white-banded Chinese species, but in that he is surely wrong, as Fabricius describes the forewing as having a yellow band. The name of *bernardus* was published eighteen years after *polyxena*.

The *males* of all the forms of *Ch. polyxena* are very partial to decaying fruits, dung, and assemble often in great numbers on damp places of roads in and near the forest. The *females* do not share the habit, and are consequently much less often caught. The sap of trees is a great attraction for the ♂♂; they come also to sugar, which can be used as bait.

a. *Ch. polyxena bajula*.

♂ ♀. *Charaxes baya* Moore var. ? *bajula* Staudinger, *Iris* II. p. 86 (1889) (Palawan).

Haridra bajula, Moore *Lep. Ind.* II. p. 248 (1895) (Palawan).

Charaxes corax dwarfed form = *bajula*, Staud. in litt. (*sic!*) Butler, *Journ. Linn. Soc. Lond.* XXV. p. 391. sub n. 120 (1896) (Palawan).

♂. *Wings above*, basi-discal area rather brighter orange than in *repetitus* and *baya*, uniform in colour.—Forewing: median bars $SC^{4.5}$ — R^2 absent or slightly vestigial, bars R^2 — M^2 marked, or just traceable; black outer area only 9 to 11 mm. wide between R^1 and R^2 , somewhat produced basad behind R^2 and before SC^6 ; discal bar M^2 — SM^2 vestigial, tawny, the tawny orange patch separated by it from the basi-discal area 2 mm. broad, bar M^1 — M^2 tawny or black, in the latter case merged together with the black area, but there remains generally a small tawny orange spot at its distal side.—Hindwing: postdisco-submarginal patches C — R^3 contiguous, their postdiscal (proximal) portions developed, patches C — R^1 together convex proximally, their edge well defined, not produced proximad at veins, white dots in centre of patches R^1 — M^1 , dots C — R^1 much larger than the others.

Underside apparently less variable, rather paler ferruginous tawny than in the allied forms; discal bars of both wings less arched, white borders of bars feeble.

♀. *Wings above*, basal area pale orange buff, paler than in the other subspecies

of *polyxena*.—Forewing: median bars R^2-M^1 more or less marked, but bars SC^4-R^2 not present, or very faintly indicated; disc pale buff yellow, paler in front than behind; discal bars, M^1-SM^2 faintly indicated as orange buff lunules, the respective postdiscal interspaces therefore not clearly separated from the discal area, the same is the case with interspace R^1-R^2 , the black area convex between M^2 and SM^2 , but incised at (SM^1), also convex between the veins from R^2-M^2 , more produced proximad between R^2 and M^1 , sinuate between R^1 and R^2 , here only 6–7 mm. broad; postdiscal interspace SC^5-R^1 sometimes separated from the discal area.—Hindwing: discal area pale buff yellow in front; median bars $C-R^2$ marked; postdisco-submarginal patches all with the proximal portions developed, hence the white dots within the patches, patch R^2-R^3 a little larger than patch R^1-R^2 , white dots large, especially upper two.

Underside as in the palest specimens of *repetitus*, median interspaces of forewing less brown, much shaded with buff; discal interspaces R^3-SM^2 of forewing much broader than median ones; tail short, rounded at tip, not spatulate.

Length of forewing: ♂, 35–37 mm.

” ” ♀, 41 mm.

Hab. Palawan. In the Tring Museum 2 ♂♂, 1 ♀.

b. *Ch. polyxena fervens*.

♀. *Charaxes polyxena*, Weymer (non Cramer, 1775), *Stett. Ent. Zeit.* p. 269 (1885) (Nias).

♂. *Charaxes psaphon*, id. (non Westwood, 1848), *l.c.* (Nias).

♂. *Charaxes fervens* Butler, *Journ. Linn. Soc. Lond.* XXV. p. 396. n. 134 (1896) (Nias).

♀. *Charaxes fervens*, Lathy, *Entom.* XXI. p. 228 (1898) (Nias).

♂. *Wings above* as in bright specimens of *repetitus*.—Forewing: median bars not marked; black outer area variable in width in front, always very narrow behind, measuring about 5 mm. behind M^2 , and 18 to 21 mm. at R^1 , sometimes interrupted at (SM^1), in which case the tawny admarginal patch M^2-SM^2 is connected with the basi-postdiscal area; discal bar M^2-SM^2 absent, or indicated as a faint tawny lunule, bar M^1-M^2 black in upper half, bar R^3-M^1 also black, mostly completely merged together with the black area; tawny postdiscal interstitial spot R^1-R^2 sometimes present.—Hindwing: proximal portions of postdisco-submarginal patches R^1-SM^2 absent, hence white dots at proximal side of the remaining submarginal portions of the black patches, size of these patches variable, but patch R^1-R^2 smaller than the following two or three.

Underside bright ferruginous tawny, discal interspaces paler proximally, bars very prominent, especially on account of their conspicuous white borders, discal bars regularly arched, on the whole more deeply concave than in the other forms of *polyxena*.—Forewing: position of bars as variable as in *repetitus* and other subspecies of *polyxena*, but median bars R^2-SM^2 rather more often continuous; white submarginal scaling prominent, distally generally limited by black scaling.—Hindwing: admarginal interspaces ochraceous, submarginal black, blue, white spots prominent; tail 4–7 mm. long.

♀. Resembling certain ♀♀ of *repetitus*. *Wings above*, discal area white, with a yellow tint, more distinctly yellow buff at internal margin of forewing, on hindwing the pale colour gradually merging between R^2 and M^1 into the tawny colour of the basi-discal area.—Forewing: median bars $SC^{4-5}-M^2$ marked; discal bars R^3-M^2 very thin, deeply arched, the postdiscal interspace M^1-M^2 nearly

as broad in middle as the black outer area, discal bar M^2 — SM^2 faintly vestigial, bar R^2 — R^3 rather heavier, the postdiscal spot at its distal side small, two more postdiscal spots in black area between SC^5 and R^2 .—Hindwing: postdiscal portions of postdisco-submarginal patches tawny olive, not black, the patches larger than in *repetitus* except patches C — R^1 ; white submarginal dots long.

Underside, discal, great part of postdiscal, a portion of the submedian interspaces of both wings and the admarginal interspaces of the hindwing more or less maize yellow; discal bars deeply arched; tawny ochraceous marginal band of forewing about 5 mm. broad at R^1 , here wider than in *repetitus*; tawny russet postdiscal half-moons of hindwing with few black scales at outer side; tawny admarginal line of hindwing very prominent; tail R^3 slightly widened before end, rounded at tip, tail M^2 indicated by a sharp tooth.

Length of forewing: ♂, 43—46 mm.

” ” ♀, 57 mm.

Hab. Nias. In the Tring Museum, 6 ♂♂, 1 ♀.

This large form of *polyxena* is fairly constant; the conspicuously marked underside distinguishes it from all other forms of *polyxena*. *Ch. polyxena fervens* does not seem to be rare, as we have seen several dozens of it.

c. *Ch. polyxena baya*.

Nymphalis baya Moore, in Horsf. & Moore, *Cat. Lep. Ins. Mus. E.I.C.I.* p. 207. n. 424 (1857) (Java; not “N. India,” nor larva and chrysalis); Pagenst., *Jahrb. Nass. Ver. Nat.* XLIII. p. 97. n. 64 (1890) (E. Java).

Charaxes baya, Butler, *Proc. Zool. Soc. Lond.* p. 636. n. 53. t. 37. f. 5, ♂ (1865) (Java; not “Borneo” and “India”); Druce, *ibid.* p. 346 (1873) (Java); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 391. n. 119 (1896) (pt.; Java).

♀. *Charaxes amycus* Felder, *Reise Novara, Lep.* p. 441. n. 719 (1867) (pt.; ♀, “Celebes” *loc. err.*). *Charaxes scylax* Felder, *Reise Novara, Lep.* p. 442. n. 720 (1867) (Java); Butl., *Tr. Ent. Soc. Lond.* p. 120. n. 11 (1870) (= *baya*).

Nymphalis polyxena var. h. *C. baya*, Kirby, *Cat. Diurn. Lep.* p. 272. sub n. 52 (1871) (pt.; Java).

Nymphalis polyxena var. j. *C. scylax*, id., *l.c.* (Java).

Nymphalis polyxena, Pagenstecher, *l.c.* n. 65 (1890) (E. Java, July).

Charaxes polixena, Snellen, *Tijdschr. v. Ent.* XXXIII. p. 290. n. 26 (1890) (pt.; Java).

Haridra scylax, Moore, *Lep. Ind.* II. p. 247 (1895) (Java).

Haridra baya, id., *l.c.* p. 248 (1895) (Java).

Charaxes baja (!), Fruhstorfer, *Berl. Ent. Zeitschr.* XLI. p. 302 (1896) (Java; = *scylax*! *loco scylax*).

♂. *Wings above*.—Forewing: black outer area broader between M^2 and internal margin and narrower between R^3 and M^2 than in *repetitus*, black discal luniform spots R^3 — SM^2 close to the black band, of the tawny postdiscal interspaces only the last one to four developed, but spots R^1 — R^3 sometimes vestigial; median bars $SC^{4,5}$ — R^2 seldom absent, seldom entirely merged together with the black area, as a rule separated from the latter by a double tawny patch, but joined posteriorly to it behind R^2 , where the black area is dilated basad; disc between cell and black outer area near costal margin sometimes rather pale.—Hindwing: postdisco-submarginal patches gradually smaller behind, the postdiscal portions of patches R^2 — M^2 not absent, though not so large as the submarginal portions, the white dots consequently within the black patches, that of patch R^1 — R^2 nearer the outer than the inner edge of the patch; black scaling more or less extending basad along SC^2 .

Underside variable as in the allied forms; median interspaces R^3 — SM^2 of the forewing on the whole wider than the discal ones, while in *repetitus* the reverse is generally the case; second tail well indicated, rather longer than in *repetitus*, those

Sumatran specimens of that subspecies excepted which are specially mentioned under *d*.

♀. *Wings above* olive tawny, variable in the depth of the olive tint.—Forewing: median bars SC^{4,5}—R² and upper part of bar D merged together to a rather large triangular patch, to which is joined the median bar R²—R³; discal band varying from creamy white to pale buffish yellow, ochraceous beyond SM²; discal bars R³—SM² rather thin, dark tawny olive, not black; postdiscal interspaces SC⁵—SM² all marked as a rule, but interspaces SC⁵—R¹ and R²—R³ sometimes absent.—Hindwing: postdisco-submarginal patches closer to outer margin than in *polyxena repetitus*, their proximal portions at least vestigial, that of patch R¹—R² well marked, hence this patch especially larger than in *repetitus*.

Underside similar to *repetitus*, but the brown median band of forewing anteriorly limited by cell-bar 4 and median bars SC³—R², while in *repetitus* the interspace between median bars SC³—R² and bar D is buff colour; hindwing with two tails, the first strongly dilated at end, 8 mm. long, the second curved costad, obliquely and obtusely cut off, 6 to 7 mm. long.

Length of forewing: ♂, 36—41 mm.

♀, 43—45 mm.

Hab. Java. In the Tring Museum 18 ♂♂, 5 ♀♀ from: "Java" (type of *scylax*); S. Java, 1500 ft. (H. Fruhstorfer); Mt. Gede, 4000 ft. (Prillwitz); Sukabumi, 2000 ft. (H. Fruhstorfer).

The ♀ described by Felder as that sex of *amyceus* and said to be from Celebes agrees with the ♀♀ of *baya*, and is certainly a Java specimen.

d. Ch. polyxena repetitus.

♀. *Charaxes borneensis*, Butler, *Lep. Exot.* p. 16. n. 7. ♀ (1869) (Borneo, ♀, non ♂).

Charaxes harpax, Distant (non Felder, 1867), *Rhop. Mal.* p. 109. n. 8. t. 13. f. 1 ♂ (1883) (Prov. Wellesley, Mal. Pen.); Nicéville, *Bull. of Ind.* II. p. 288. n. 581 (1886) (pt.; Prov. Wellesley; Borneo); Hagen, *Iris*, IX. p. 187. n. 249 (1896) (N.E. Sum.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 118 (1896) (pt.; Borneo; Sumatra); Bartl., *Note Book of Sarawak* II. p. 68. n. 125 (1896).

Charaxes polyxena, Snellen (non Cramer, 1775), *Tijdschr. v. Ent.* XXXIII. p. 290. n. 26 (1890) (Billiton).

Charaxes polyxena, id., in Snellemann, *Midd. Sumatra* II. p. 16 (1892).

Charaxes (Haridra) harpax, Nicéville and Martin, *Journ. As. Soc. Beng.* LXIV. 2. p. 437. n. 263 (1895) (N.E. Sumatra).

Haridra harpax, Moore, *Lep. Ind.* II. p. 237. t. 174. f. 1b. 1c. ♀ (1895) (pt.; Mal. Pen.; Sumatra; Borneo).

Charaxes baya, Butler (non Moore, 1857), *Journ. Linn. Soc. Lond.* XXV. p. 391. n. 119 (1896) (Sarawak; non Java); Bartl., *l.c.* n. 126 (1896).

Charaxes repetitus Butler, *l.c.* p. 392. n. 123 (1896) (Sarawak, ♂).

Charaxes ajax Fawcett, *Ann. Mag. N.H.* (6) XX. p. 112 (1897) (Batak Mts., Sumatra, June, July).

♂. We cannot find any constant character by which to distinguish all the *males* from the Malay Peninsula, Sumatra, the Natuna Islands, and Borneo from the continental *Ch. polyxena hierax* ♂-*f. corax*. Major Fawcett described individuals from the Batak Mountains, Sumatra, as a new species, *Ch. ajax*; we have compared a number of specimens from that locality, but failed to see that the greater percentage of them were any more different from the examples from the lowlands of Sumatra or from Borneo than the specimens from either of these latter

localities are *inter se*, though some individuals have a slightly different aspect on account of the larger postdisco-submarginal patches of the hindwing. Dr. Butler's *repetitus* from Borneo is based upon an individual in which the discal and median interspaces of the forewing above are whitish buff in the costal region; transitions from the ordinary Bornean examples to this form, which agrees with certain examples of *Ch. polyxena hierax* ♂-f. *jalinder*, are not rare, but examples with the discal band so clearly indicated as in the *type* specimen of *repetitus* are rare, there being only one in the Tring Museum among the hundred ♂♂ selected from large quantities. This specimen came from Bakan, N. Borneo, and was collected (like the *type*!) by the late Mr. A. Everett, in July 1891. On the whole the ♂♂ of *repetitus* have the black admarginal lunules of the hindwing *above* better marked than the individuals of the continental ♂-f. *corax*, and the submedian and median bars of the *underside* are nearly always conspicuously edged with white.—*Upperside*: black area of forewing variable in width, often reaching cell along SC^{4,5}, postdiscal, interstitial, tawny spots variable in number, discal bars M¹—SM² often absent, sometimes completely merged together with the postdisco-marginal band: postdisco-submarginal patches of hindwing either as in ♂-f. *corax*, the postdiscal portions of patches R¹—SM² absent or obsolete, or as in ♂-f. *hierax*, the white dots standing in the centre of the rather large and continuous, or subcontinuous, patches, with all intergradations from the same places; in a few examples some of the postdisco-submarginal spots join the black admarginal lunules. The *underside* varies much in the general tint; russet specimens are the commonest, but there are also olive buff and bright cinnamon rufous ones.

♀. *Upperside*: basal area varying from bright tawny ochraceous to tawny cinnamon; band of forewing pale ochreous buff, postdiscal interstices R¹—SM² the same colour, discal bars M¹—SM² often feebly marked, median bars SC^{4,5}—M² vestigial or even absent, bar R³—M¹, however, sometimes heavier; or the discal band is white down to M² or (SM¹), the postdiscal interstitial spots are smaller, partly absent, and the median bars R³—M² are heavier; white submarginal dots R¹—SM² of hindwing always at proximal side of the black patches, the postdiscal portions of these patches being obsolete; Sumatran individuals occasionally with two tails like the ♀ of *Ch. polyxena baya* from Java.

Hab. Malay Peninsula, Sumatra, Banka, Billiton, Natuna Islands, Borneo. In the Tring Museum 100 ♂♂, 8 ♀♀.

In Sumatra the insect is found, according to Dr. Martin "from the sea (Paya Bakong) to Bekantschan. It occurs in every forest, where it is especially partial to faeces and moist spots. It is a very variable insect as regards the extent of the black colouration on the upperside of the forewing, and the colouring of both wings on the underside." Dr. Hagen calls it the most common of all the tawny species of *Charaxes*. In Borneo it must also be common, judging from the number of specimens that are found in collections sent from there. Amongst the specimens which Dr. Martin's collectors brought from the Battak Mountains are some in which the tawny postdiscal spots R¹—SM² of the forewing above are all developed, the postdisco-submarginal patches rather longer than in ordinary individuals, and second tail, more obviously indicated; it is possible that these specimens together with the two-tailed ♀ recorded by Dr. Martin belong to a mountain race, the name of which would eventually be *ajax*.

e. *Ch. polyxena hierax*.

- Charaxes bernardus*, Doubleday, *List. Lep. Ins. Brit. Mus.* I. p. 112 (1844) (partim).
- Nymphalis bernardus*, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 35 (1850) (pt.; N. India); Horsf. & Moore, *Cat. Lep. Ins. Mus. E.I.C.* I. p. 206. n. 423 (1857) (pt.; Silhet; Darjiling).
- Nymphalis baya*, Moore, in Horsf. & Moore, *Cat. Lep. Ins. Mus. E.I.C.* I. p. 207. n. 424. t. 12. f. 14. 14a. (1857) (pt.; N. India).
- Charaxes baya*, Butler, *Proc. Zool. Soc. Lond.* p. 636. n. 53 (1865) (pt.; India); Nicéev., *Butt. of Ind.* II. p. 286. n. 578 (1886) (pt.).
- Charaxes bernardus*, Butler, *Proc. Zool. Soc. Lond.* p. 636. n. 54 (1865) (pt.; N. India); Wats., *Journ. Bombay N. H. Soc.* VI. p. 42. n. 96 (1891) (Chin Lushai); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 392. n. 125 (1896) (pt.).
- Charaxes hierax* Felder, *Reise Novara, Lep.* p. 442. n. 721 (1867) (Assam); Butl., *Tr. Ent. Soc. Lond.* p. 120. n. 12 (1870) (= *bernardus*); Nicéev., *Butt. of Ind.* II. p. 290. n. 583 (1886) (pt.); Elwes, *Tr. Ent. Soc. Lond.* p. 369. n. 215 (1888) (Sikkim); Wats., *Journ. Bombay N. H. Soc.* VI. p. 42. n. 95 (1891) (Pank to Tiliu, Oct.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 117 (1896) (Upp. Assam; Silhet; non "China").
- Charaxes hipponax* Felder, *l.c.* p. 443. n. 722 (1867) (Assam); Butl., *Tr. Ent. Soc. Lond.* p. 120. n. 13 (1870) (= *bernardus*); Nicéev., *Butt. of Ind.* II. p. 290. n. 584 (1886) (Cachar; Sylhet; Khasi Hills; Sikkim); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 393. n. 126 (1896); Wats., *Journ. Bombay N. H. Soc.* X. p. 636 (1896) (Manipur R., Tiddim, 2000 ft.).
- Charaxes pleistoanax* Felder, *l.c.* p. 443. n. 723 (1867) (Assam); Butl., *Tr. Ent. Soc. Lond.* p. 121. n. 14 (1870) (= race of *bernardus*); Nicéev., *Butt. of Ind.* II. p. 292. n. 587 (1886); Elwes, *Tr. Ent. Soc. Lond.* p. 369. n. 216 (1888) (Sikkim); Nicéev., *Journ. Bombay N. H. Soc.* V. p. 297. n. 51 (1890) (Chin Lushai); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 394. n. 129 (1896) (Sikkim; Bhutan; Assam).
- Charaxes corax* Felder, *l.c.* p. 444. n. 724 (1867) (Ind. sept.); Butl., *Tr. Ent. Soc. Lond.* p. 121. n. 15 (1870) (Silhet); Nicéev., *Butt. of Ind.* II. p. 287. n. 580 (1886); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 391. n. 120 (1896) (pt.).
- Charaxes harpa* Felder, *l.c.* p. 444. n. 725 (1867) (hab. ?); Moore, *Proc. Zool. Soc. Lond.* p. 832 (1878) (Moulmein to Meetan; Moolai, 3-6000 ft.); Nicéev., *Butt. of Ind.* II. p. 288. n. 581 (1886) (pt.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 118 (1896) (pt.; Silhet; E. Pegu); Wats., *Journ. Bombay N. H. Soc.* VI. p. 42. n. 94 (1891) (Chin Lushai, iii. v. x. xi).
- Nymphalis polyxena*, Kirby, *Cat. Diurn. Lep.* p. 272. n. 52 (1871) (pt.).
- Nymphalis polyxena* var. a. *Char. pleistoanax*, Kirby, *l.c.* p. 272. sub. n. 52 (1871) (Assam).
- Nymphalis polyxena* var. c. *C. hierax*, Kirby, *l.c.* (1871) (Assam).
- Nymphalis polyxena* var. e. *C. hipponax*, Kirby, *l.c.* (1871) (Assam).
- Nymphalis polyxena* var. h. *C. baya*, Kirby, *l.c.* (1871) (pt.; India).
- Nymphalis polyxena* var. l. *C. corax*, Kirby, *l.c.* p. 273 (1871) (Ind. bor.).
- Charaxes khimalara* Butler, *Lep. Exot.* p. 97. n. 2. t. 37. f. 1 (1872) ("N. W. Himalayas" *err. loc.*; Nepal); Nicéev., *Butt. of Ind.* II. p. 292. no. 588 (1886).
- Charaxes khasiomus* Butler, *Lep. Exot.* p. 98. n. 3. t. 37. f. 6 (1872) (Khasia Hills; N. E. Bengal); Nicéev., *Butt. of Ind.* II. p. 293. n. 589 (1886) (Jorehât; Sikkim).
- Charaxes jalinder* Butler, *Lep. Exot.* p. 98, n. 4. t. 37. f. 4 (1872) (N. E. Himalayas); Nicéev., *Butt. of Ind.* II. p. 291. n. 585 (1886).
- Charaxes hindia* Butler, *Lep. Exot.* p. 99. n. 6. t. 37. f. 5 (1872) (Darjiling, ♂, not ♀; ♀ = *innua*, *loc. err.*); Nicéev., *Butt. of Ind.* II. p. 291. o. 586 (1886).
- Charaxes agna* Moore, *Proc. Zool. Soc. Lond.* p. 832 (1878) (Moolai, Upp. Tenass., 3-6000 ft.); Nicéev., *Butt. of Ind.* II. p. 289. n. 582 (1886).
- Charaxes wattii* Butler, *Proc. Zool. Soc. Lond.* p. 148. n. 6. t. 15. f. 2 (1880) (Bishnath, Assam); Nicéev., *Butt. of Ind.* II. p. 287. n. 579 (1886); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 118 (1896) (pt.).
- Nymphalis polyxena*, Nicéville, *Journ. As. Soc. Beng.* L. 2. p. 58. n. 100 (1881) (Sikkim).
- Haridra polyxena*, Nicéville, *Journ. As. Soc. Beng.* 1. 2. p. 61 (1882) (Sikkim).
- Haridra agna*, Butler, *Ann. Mag. N. H.* (5). XVI. p. 306. n. 49 (1885) (Manipur).
- Haridra hindia*, Butler, *Ann. Mag. N. H.* (5). XVI. p. 306. n. 50 (1885) (Maoipur); Swinh., *Tr. Ent. Soc. Lond.* p. 290. n. 203 (1893) (Khasia Hills).
- Charaxes (Haridra) corax*, Wood-Mas. & Nicéev., *Journ. As. Soc. Beng.* LV. 2. p. 363. n. 104 (1886) (Cachar, June—August); Elwes & Nicéev., *ibid.*, p. 427. n. 85 (1886) (Tavoy).

- Haridra khimulara* Butler, *Ann. Mag. N. H.* (5). XVI. p. 306. n. 51 (1885) (near Assam); Swinh., *Tr. Ent. Soc. Lond.* p. 290. n. 202 (1893) (Khasia Hills).
- Haridra borneensis*, Moore (*non* Butler, 1869), *Journ. Linn. Soc. Lond.* XXI. p. 38 (1886) (Mergui, Elphinstone).
- Charaxes (Haridra) julinder*, Wood-Mas. & Nicéy., *l.c.* LV. p. 363. n. 105 (1886) (Cachar : Dharmkhal, Nemotha); Nicéy., in Risley, *Gazetteer of Sikkim* p. 148. n. 239 (1894) (Sikkim).
- Charaxes (Haridra) hindia*, Wood-Mas. & Nicéy., *l.c.* LV. p. 364. n. 106 (1886) (Cachar, Silenri, June to August); Nicéy., in Risley, *Gazetteer of Sikkim* p. 148. n. 240 (1894).
- Charaxes (Haridra) agna*, Elwes & Nicéy., *Journ. As. Soc. Beng.* LV. 2. p. 427, n. 84 (1886) (Tavoy).
- Nymphalis hindia*, Robbe, *Ann. Soc. Ent. Belg.* XXXVII. p. 130. n. 54 (1892) (Darjiling, Kurseong).
- Haridra corax*, Swinhoe, *Tr. Ent. Soc. Lond.* p. 289. n. 197 (1893) (Khasia Hills); Moore, *Lep. Ind.* II. p. 238. t. 175. f. 1. 1a. 1b. ♂, l., p. (1896) (Sikkim; Bhotan; Assam; Khasia Hills; Burma).
- Haridra khasiana*, Swinhoe, *l.c.* p. 290. n. 198 (1893) (Khasia Hills); Moore, *l.c.* p. 245. t. 182. f. 1. 1a. ♂. ♀ (1896) (Khasia Hills; Burma).
- Haridra hierax*, Swinhoe, *l.c.* n. 199 (1893) (Khasia Hills); Moore, *l.c.* p. 239. t. 176. f. 1. 1a. b. ♂. ♀ (1896) (Assam).
- Haridra hipponax*, Swinhoe, *l.c.* n. 200 (1893) (Khasia Hills); Moore, *l.c.* p. 242. t. 198. f. 1. 1a. ♀. ♂ (1896) (Sylhet; Khasia Hills; Naga Hills).
- Haridra pleistoanax*, Swinhoe, *l.c.* n. 204 (1893) (Khasia Hills); Moore, *l.c.* p. 244. t. 181. f. 1. 1a. b. c. ♂. ♀ (1886) (Sikkim; Bhotan; Naga Hills).
- Haridra julinder*, Swinhoe, *l.c.* n. 204 (1893) (Khasia Hills); Moore, *l.c.* p. 243. t. 179. f. 1. 1a. b. c. ♂. ♀ (1896) (Khasia and Naga Hills; Upp. Burma).
- Charaxes (Haridra) hierax*, Nicéville, in Risley, *Gazetteer of Sikkim* p. 148. n. 237. (1894) (Sikkim, rare, low elev.).
- Charaxes (Haridra) hipponax*, Nicéville, *l.c.* n. 238 (1894) (Sikkim); Wats., *Journ. Bombay N. H. Soc.* X. p. 657. n. 122 (1896) (Manipur R., = *hindia* = *julinder*).
- Haridra harpax*, Moore, *Lep. Ind.* II. p. 237. t. 174. f. 1. 1a. (1896) (pt.).

The various differently coloured forms united here under *hierax* are neither local nor seasonal. In many places all the forms occur together at the same time of the year, but one form may be much rarer than the other. The intergradations also occur together with the more extreme varieties. Judging from the dated specimens, it appears that individuals from pupae that have hibernated are small, and have the band of the forewing never all white.

The males can conveniently be divided into some main groups of individuals, each main group again being arbitrarily divisible into a number of groups, as the individuals vary so much that scarcely any two are found alike, if one compares the upper- and undersides. Although it is convenient for the student of variation to have names for the individual varieties, we think it would not be wise to introduce new names for those forms of the present subspecies which have escaped being baptized by Felder, Butler, or Moore. We arrange, therefore, the following exposition in such a manner that the ten names given by those authors to individuals of *Ch. polyxena hierax* are a sufficient supply. It is needless to say that the groups of specimens are not sharply defined.

♂. I. White band of forewing extending to internal margin. Basal area of wings, *above*, blackish tawny olive to tawny, mostly with white scaling at proximal side of median bars; specimens without postdiscal interstitial spots on forewing are ♂-f. *pleistoanax* (= *khimulara*), specimens with such spots are ♂-f. *khasianus*.

II. White band of forewing stopping at SM², or absent, with intergradations.

1a. White submarginal dots of hindwing in centre of postdisco-submarginal patches R¹—SM², or nearer their outer edge.

- 2a. Black disco-marginal area of forewing very wide in costal region, the tawny or white median and discal interstices $SC^{4,5}-R^2$ small, often filled up with black; discal band of forewing varying from being white to being only a little paler than the basal area; median bars $R^3-(SM^1)$ of forewing well-marked also in the tawny specimens: ♂-f. *hipponax*.
- 2b. Discal and median interspaces $SC^{4,5}-R^2$ of forewing *above* well developed.
- 3a. Band of forewing varying from white to pale yellow. Specimens with the black median bars $SC^{4,5}-M^2$ of forewing *above* absent are Bntler's *hindia*: ♂-f. *jalinder*.
- 3b. Discal interspaces of forewing *above* scarcely paler than basal area, sometimes slightly buffish or whitish in costal regions, with or without obvious black median bars. ♂-f. *hierax* (= *watti*).
- 1b. White submarginal dots * of hindwing standing at the proximal edges of the black postdisco-submarginal patches R^2-SM^2 , the post-discal portions of these patches being obsolete, the patches small and, generally well separated from each other; patches $C-R^1$ large and merged together, seldom also small; ♂-f. *corax* (= *agna* = *harpax*).

♀. In this sex the band of forewing is always more or less white, seldom all yellowish white. If we divide here the ♀ into several groups we must expressly state that we do not mean to say that the *females* and *males* called by the same aberrational name do not mate with the individuals called by other names; a *pleistoanax* ♀ is not only a ♀ of the ♂-f. *pleistonax*, but also of ♂-f. *jalinder*, ♂-f. *hierax*, etc. Though it is known from some mammals, especially domesticated ones, that they prefer associating (and copulating) with similarly coloured individuals, such an association rendering the single individual less conspicuous, and hence more protected, it is scarcely admissible to assume that the individuals of the present variable insect gave preference in mating to those colours that came nearest their own. The names of aberrations have not the same biological meaning as specific and subspecific names, but express simply the fact that the individuals so named have certain characters in common.

I. Discal band of forewing white, reaching internal margin; white scaling extending basad at least to point of origin of M^2 (♀-f. *khasianus*), not extending so far down (♀-f. *pleistoanax*).

II. Band stopping at SM^2 .

1a. White submarginal dots of hindwing in centre of black postdisco-submarginal patches, or nearer their outer edges.

2a. White discal interstices SC^4-R^2 of forewing smaller than the respective median ones: ♀-f. *hipponax*.

2b. . . larger than the median ones, the black median bars nearer the inner than the outer edge of the band: ♀-f. *hierax*. The specimens do not exhibit characters which would justify a separation into two forms as in the case of the ♂♂ (♂-f. *hierax*, ♂-f. *jalinder*).

* If the dots are absent their position can be ascertained by holding the specimen against the light; the dots of the underside will then show through.

1b. White submarginal dots of the hindwing at the proximal edge of the black postdisco-submarginal patches R^1 — SM^2 , the proximal parts of these patches being obsolete: ♀-f. *corax*.

Hab. Sikkim to Tenasserim, more or less common; the ♂♂ without bands rare in Sikkim, occurring there only at low elevations, the aberrations named *jalinder* and *hindia* apparently the commonest of all.

The number of teeth on the penis varies much individually; the subapical teeth are not so strong as in *psaphon*; in many specimens there is a lateral patch of minute teeth as in *Ch. marmax*, but this character is not only extremely variable individually, but occurs independently of the characters of the wing which distinguish the various forms enumerated above.

f. *Ch. polyxena hemana*.

Charaxes bernardus, Kollar (non Fabricius, 1793), in Hügel, Kaschmir IV. 2. p. 434. t. 11 f. 1. 2. ♂ (1844) (Massuri).

Charaxes hemana Butler, *Tr. Ent. Soc. Lond.* p. 122. t. 4. f. 1 ♂ (1870) (Nepal); Nicéev., *Butt. of India* II. p. 283. n. 575 (1886) (Nepal; Kumaon); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 391. n. 122 (1896) (Mussoorie; north of Landoor; "North India"!).

Nymphalis polyxena var. g. *Ch. hemana*, Kirby, *Cat. Diurn. Lep.* p. 273. sub n. 52 (1871) (Nepal).

Charaxes (Haridra) hemana, Doherty, *Journ. As. Soc. Beng.* 1887. II. p. 124. n. 97 (1886) (Kumaon); Mackin. & Nicéev., *Journ. Bombay N. H. Soc.* XI. p. 377. n. 124 (1897) (Mussoorie, Sept., 4000 ft.).

Haridra hemana, Moore, *Lep. Ind.* II. p. 240. t. 177. f. 1. 1a. 1b. ♂, ♀ (1896) (N.W. Himalayas; Nepal).

♂. Similar to *Ch. psaphon imna*, but forewing *above* with two or more post-discal interstitial lunules and with tawny ochraceous outer margin; postdisco-submarginal patches of hindwing without white dots, except last two; apex of forewing more acute than in the not-banded ♂♂ from N.E. India and Burma, outer margin less deeply concave, and anal angle of hindwing more rounded.

♀. *Wings above* pale tawny ochraceous, approaching buff yellow.—Forewing: median black bars SC^5 — SM^2 all present, or bar (SM^1)— SM^2 absent; outer margin tawny ochraceous, especially below apex and near hinder angle.—Hindwing: postdisco-submarginal patches C — R^1 much larger than the others, confluent, all the others separated, sometimes touching each other; marginal line very little darker than disc.

Butler's and Moore's figures of the ♂ disagree considerably; though Moore says that his figure was taken from a ♂ "identical with the type." The form seems to be distinguishable from the not-banded examples from the more eastern parts of India, but the few specimens we have seen vary *inter se*.

Hab. N.W. India and Nepal; 1 ♀ in the Tring Museum.

The insect is rare. Doherty, *l.c.*, records it from "Kapkot on the Sarju, perhaps the western limit of the group; also, Eori and Káli valleys." He adds: "my specimens seem to correspond well enough with Mr. Butler's figure and description, but the markings are not very constant."

Mackinnon, *l.c.*, found it "near Mussoorie in September at 4000 ft. elevation."

g. *Ch. polyxena polyxena*.

♀. *Papilio Eques Achirus polyxena* Cramer, *Pap. Exot.* I. p. 85. t. 54. f. A.B. (1775) (China tails broken).

Pavilio Nymphalis Gemmatus polyxena, Goeze, *Ent. Beytr.* III. 1. p. 288. n. 65 (1779).

- ♀. *Papilio Eques Achirus bernardus* Fabricius, *Ent. Syst.* III. 1. p. 72. n. 223 (1793) (China : descr. from Jones's drawing!).
- ♀. *Papilio bernardus*, Donovan, *Ins. of Chiu* t. 35 (1798) (China).
- Doxocopa epilais* Hübner, *Verz. bek. Schmett.* p. 50. n. 464 (1816-27).
- Nymphalis polyxo* Godart, *Enc. Méth.* IX. p. 399. n. 169 (1823) (China).
- Satyrus bernardus*, Godart, *l.c.* p. 477. n. 2 (1823).
- Nymphalis bernardus*, Doubleday, West. & Hew., *Genera Diurn. Lep.* II. p. 309. n. 35 (1850) (China ; non "N. India.")
- Charaxes bernardus*, Butler, *Proc. Zool. Soc. Lond.* p. 636. n. 54 (1865) (China ; non "N. India.") ; *id.*, *Cat. Diurn. Lep. descr. by Fabr.* p. 50. n. 2 (1869) (China) ; *id.*, *Journ. Linn. Soc. Lond.* XXV. p. 392. n. 125 (1896) (pt. ; China).
- Nymphalis polyxena*, Kirby, *Cat. Diurn. Lep.* p. 272. n. 52 (1871) (part.).
- Charaxes polyxena*, Druce, *Proc. Zool. Soc. Lond.* p. 346 (1873) (China) ; Leech, *Butt. of China, etc.* I. p. 125 (1893) (Owei-shan ; Mupin) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 392. n. 124 (1896) (China).
- Haridra bernardus*, Moore, *Lep. Ind.* II. p. 246 (1896) (Hong-Kong, May).
- Haridra polyxena*, Moore, *l.c.* p. 247 (1896) (S. China).
- Charaxes hierax*, Butler, *l.c.* p. 390. n. 117 (1896) (pt. ; China, ♂.).

Dr. F. Moore describes (*l.c.*) *bernardus* and *polyxena* as two distinct species ; the ♂♂ are indeed as different as the Indian banded and not-banded ♂♂ of *hierax*, but the description of what Moore regards to be the ♂ of *polyxena*, is almost verbally the same as that of the ♀ of *bernardus*. One of the two ♀♀ in the British Museum has the discal band of the forewing much more ochraceous than it is in Cramer's and Donovan's figures, being only slightly paler than the basal area of the wing, while the other ♀ agrees fairly well with those figures ; a ♀ in the Tring Museum has the band almost pure white.

♂. Dichromatic ; in some specimens of the not-banded form there is a vestige of the band in the costal region.

*a*¹. Forewing with a white band, stopping at SM², bluish at edges, sharply defined, composed of three large patches R³—SM², and a small one R²—R³ which is more proximal, two median spots SC¹⁻⁵—R², often absent, and two discal dots SC⁵—R², also often absent ; postdiscal tawny interstitial halfmoons R³—SM² more or less marked, or absent.—Hindwing : discal interspaces C—R² whitish at median bars, the white scaling restricted, shaded with fulvous ; postdisco-submarginal black patches C—R¹ large, extended to outer margin between C and SC², the other patches gradually smaller ; white dots within the patches marked, often absent, except last two.—*Underside* : discal arched bars of both wings tawny, not black, the postdiscal brown or black patches of forewing of other forms vestigial only in costal region ; black basal to median bars of hindwing partly obsolete ; tail 3½ mm. long.—♂-f. *polyxena*.

*b*¹. Forewing without white band, or only with a trace of it in costal region ; median bars SC⁶—SM² marked ; postdiscal tawny interstitial spots R³—SM² marked, variable in size, sometimes also spots R¹—R² present or indicated.—Hindwing : postdisco-submarginal patches more or less contiguous, except the last three, with or without white dots in centre.—*Underside* : discal arched bars feebly marked, tawny, black basal to median bars of hindwing better marked than in ♂-f. *polyxena* ; postdiscal patches of forewing vestigial or absent ; tail as in preceding form, rather broad and long. Scarcely distinguishable from the Indian form *hierax* (see p. 333).

♂-f. *sinensis* Rothsch., nom. nov. (*polyxena*, Moore non Cramer).

♀. *Forewing above*, discal band varying from yellowish white to pale ochraceous, the extremes can be matched with the two forms of the ♂ ; the band stopping short at SM² ; median bars SC⁵—R² present or not, postdiscal interstitial

spots variable in size and number.—Hindwing: postdisco-submarginal black patches separated, except upper two, or more or less contiguous; discal interspaces C—R² very restricted white or whitish ochraceous at outer side of median bars, the whitish scaling not extended to the black postdisco-submarginal patches, not even in the examples with the band of the forewing nearly pure white.—*Underside*: discal arched bars better marked than in ♂, but more tawny than in Indian ♀♀, basal to submedian bars sometimes partly obsolete; white submarginal scaling very variable in extent; postdiscal patches small, tawny, not black.

Length of forewing: ♂, 38—42 mm.

” ” ♀, 48—53 mm.

Hab. China, rare: known from Hong-Kong, Mupin, Omei-shan (W. China). In the Tring Museum 2 ♂♂ and 1 ♀ from between Shanghai and Kiukiang, of the banded form, all three with the bars in the basal half of the hindwing below more or less obsolete; 3 ♂♂ of the not-banded form labelled “China” and Hong-Kong.

12. *Charaxes psaphon*.

Charaxes psaphon Westwood, *Cub. Or. Ent. t. 21. f. 1, 2* (1848) (Ceylon).

♂ ♀. *Body above* olivaceous tawny ochraceous.

♂. *Wings, upperside*, tawny orange colour.—Forewing: cell-bar 3 generally vestigial; bar D heavy, but occasionally abbreviated behind; median bars very seldom vestigial (but shining through from underside in certain lights); disco-marginal black area very wide, measuring at least 20 mm. in front and 9 to 10 mm. before SM², its edge irregular, the black colour extending basad especially behind R² and M¹, but taken as a whole almost gradually narrowing behind; tawny marginal line sometimes vestigial between veins.—Hindwing: median bars C—R¹ always more or less clearly marked, sometimes also bar R¹—R², tawny colour at outer side of these bars occasionally rather pale; postdisco-submarginal black patches C—R² or C—R³ so far extended basad as to cover the place where the discal bars would stand, if they were developed, hence forming a large black patch, which becomes narrower behind, veins black near the patch, postdisco-submarginal spots R²—SM² or R³—SM² more or less isolated, but often not clearly defined owing to the tawny ground-colour near the postdisco-submarginal spots being generally much shaded with cinnamon; white submarginal dots mostly absent, dot C—SC² often well-marked, the two anal ones always present; anal admarginal interspace olive yellow.

Underside somewhat variable in general tint; admarginal interspaces of hindwing and sometimes also those of forewing wax-yellow; basal two-thirds of cell of forewing, submedian interspaces of hindwing and proximal portions of discal ones of both wings mostly buff colour.—Forewing: median bars R²—SM² almost continuous; postdiscal black blotches obvious, submarginal black or brown bars sharply limiting the glossy white scaling at their proximal side; median bar R¹—R² closer to cell than to discal bar R²—R².—Hindwing: postdiscal interspaces sometimes with a greenish tint, admarginal line well defined; tail 2½ to 6½ mm. long.

♀. *Wings above* often much darker in basal half than in ♂.—Forewing: cell-bar 3 sometimes rather well marked, also bar 4 occasionally vestigial, upper angle of cell with black scaling, seldom with a white spot; bar D very heavy, median bar R²—R³ fused with it, or absent, median bars R³—(SM¹) often very

conspicuous, seldom obsolete; a white discal band, slightly curved, reaching to SM², but more or less extendedly shaded with orange-ochraceous in front of SM², outer edge of band sinuated between veins; tawny postdiscal interspace M²—SM² mostly marked, sometimes divided into two dots, sometimes there is another postdiscal spot present before M²; spots R¹—R² and R³—M¹ seldom vestigial; outer edge of wing mostly black, but in some specimens somewhat tawny; median bars SC⁵—R² absent (but showing through from underside).—Hindwing: median bars C—R² present, the wing at the outer side of these bars varying from pale orange buff to white, postdisco-submarginal patches C—R¹ broader than the interspace between them and the median bars, the other patches smaller, diminishing in size behind, the last four isolated, the white dots all present, but the third sometimes vestigial only; discal lunules R¹—SM² marked as dark shadows between the postdisco-submarginal patches and the discal lunules of the underside, which latter shine through above; admarginal line faintly marked; anal admarginal interspace olive-yellow.

Underside: russet brown, seldom more or less dirty buff yellow with the median interspaces russet brown; discal interspaces of both wings varying from pale buff yellow to cream colour, their distal portions (at discal lunules) more or less extended russet brown; submedian interspaces also partly cream colour or pale buff yellow; postdiscal interspaces pale buff yellow at discal lunules; marginal band-like area of forewing as sharply defined as in ♂; admarginal interspaces of hindwing maize yellow, admarginal line sharply defined; upper tail spatulate, 8 to 10 mm. long, second 4 mm. or less.

Penis strongly denticulate, the teeth heavier and more densely set than in the allied species. Penis-funnel comparatively short and broad.

Length of forewing: ♂, 40—44 mm.

“ ” ” ♀, 47—52 mm.

Hab. Ceylon and South India.

The specimens from South India are, in the opinion of some Lepidopterists, specifically distinct from those obtained in Ceylon. But on examination of a series of individuals from both countries we find that it is impossible to keep them apart specifically. The characters by which Moore and others have thought to distinguish the two “species” are so variable in the specimens of both countries that there is in the *female* sex a complete gradation from one extreme to the other, while in the *male* sex some Ceylonese specimens agree with typical South Indian ones and certain South Indian examples exhibit typically Ceylonese characters. However, the greater percentage of specimens from both countries are distinguishable, in the *female* sex especially, and hence we keep them, with some reluctance, subspecifically separate.

a¹. *Ch. psaphon imna*.

Charaxes imna Butler, *Tr. Ent. Soc. Lond.* p. 122. t. 4. f. 2 (1870) (“India”); Nicé., *Bull. of India* II. p. 285. n. 577 (1886) (Orissa; Bombay; Khandalla; Wynaad; Matheran; Travancore; Beypoor); Aitk., *Journ. Bombay N. H. Soc.* I. p. 132. n. 24 (1886) (Matheran, Ghâts, XII. to XIII.); Hamps., *Journ. As. Soc. Beng.* LVII. 2. p. 355. n. 83 (1888) (Nilgiris, 3–4000 ft., rare); Davids. & Aitk., *Journ. Bombay N. H. Soc.* V. p. 278. n. 40. t. A. f. 4. *3a*. larva, chrys. (1890) (life hist.); Betham, *ibid.* p. 285. n. 51 (1890) (Centr. Prov.); Ferg., *ibid.* VI. p. 440. n. 82 (1891) (Travancore); Betham, *ibid.* VIII. p. 423. n. 16 (1893) (Matheran, IV. V.); Davids., Bell, & Aitk., *ibid.* X. p. 258. n. 67 (North Canara).

Charaxes hindia Butler, *Lep. Exot.* p. 99. n. 5. t. 37. f. 5 ♀ (1872) (“Darjeeling” *loc. err.*).

(?) *Charaxes prox. hindia*, Nicéville, *Journ. As. Soc. Beng.* LIV. 2. p. 45. n. 53 (1885) (Alipur, near Calcutta, 1 ♀).

Haridra imna Moore, *Lep. Ind.* II. p. 231. t. 169. f. 1. 1a. b. c. ♂. ♀, larv., chrys. (1896) (type in coll. Grose Smith; Parasnath Hill, Behar, ♀ = type *hindia* ♀ Bntl.; Ranchi, Chota Nagpore; Nagpur; Alipur, Calcutta; Khorda, Orissa; Khandalla, IV. X.; Lanaoli, II.; Coonoor; Nilgiris; Shevaroy Hills; Kathlekan, Mysore, XI.; Travancore; Wynaad; Bepur; Matheran).

♂. The black colour of the upperside in most specimens a little more restricted than in Ceylonese examples, tails shorter on an average; submedian and median bars less obviously bordered white.

♀. Wings above brighter tawny orange than in *psaphon psaphon*; discal band of forewing posteriorly more extendedly shaded over with orange-ochraceous; postdiscal tawny interspaces of forewing more often developed than in the Ceylonese form, the outer edge of the wing often somewhat tawny.

Hab. South India to Lower Bengal. In the Tring Museum 8 ♂♂, 5 ♀♀ from: Kanara, Karwar, Kathlekan (Mysore), Travancore, Lanaoli, Marableshtar.

Though *Ch. psaphon imna* does not seem to be abundant anywhere, it is found in suitable localities all over the peninsula, and goes as far north as Calcutta, if Moore is correct in referring the specimen recorded by Nicéville as *Ch. prox. hindia* (*l.c.*) to *imna*.

The habits of this insect and the life history have been made known by Messrs. Betham, Davidson, Bell, and Aitken.

Mr. Aitken, *l.c.*, 1886, says in his list of the Bombay Butterflies, that he "became aware of the existence of this striking butterfly only last December, when Mr. J. Davidson and I spent part of two days at Matheran in trying to capture two specimens, or rather, I should say, one specimen, for when we got them we found that only half of each remained. I have found since that the species is by no means uncommon on the ghâts from December till March at least; but it does not put itself in the way of being converted into specimens. It comes out about 10 o'clock, and selecting a tree with bright, shiny leaves, perches bolt upright in the middle of a particular leaf just a foot above the highest point you can reach with your net. Whether by accident or design, the position is fenced on all sides with a creeper whose sharp-curved thorns lay hold of everything that passes them and let go nothing. There the proud creature sits, chasing away any other butterfly that approaches, and returning to the same leaf. If you pelt it with stones, it darts off, takes a short circuit and returns to the same leaf. You may pelt it for an hour with the same result. You may easily circumvent it, however, by erecting a platform of stones under its perch, but your aim must be sure and your stroke sudden, for no other butterfly goes off with such rapidity. There is only one specimen of this in the Society's collection, a male which I caught at Khandalla."

Mr. Betham, *ibid.* V. p. 285, says: "This is truly a beautiful creature. The colours are a deep rich chestnut with a velvety black border in the *male*, relieved in the *female* by a broad white band across the forewing. It has the most powerful flight of any butterfly I know (while *E. athamas* has the fastest), and looks like a bird while on the wing.

"The female is larger than the male and much more conspicuous, because of the broad white band aforesaid. It is, however, a very foul feeder and greedily fond of mhowa, so much so that it can be approached and taken by the fingers while engaged in its meal. One year I took several of these and *C. fabius* and a few *C. athamas*, at a sirris tree, *Acacia speciosa*, which had a bough injured in

some way, and from which a juice exuded. Several other kinds of insects, chiefly ants and flies, were attracted by this juice, and a number of small green bee-eaters, *Merops viridis*, the magpie robin, *Copsychus salamis*, and the king crow or arongo shrike, *Buchanga atra*, were attracted by the insects. The wings of several of the *Charaxes* that I took had bits clipped out of them by the beaks of birds. Toddy is also a good bait for butterflies, after it has fermented a little. I was induced to try it after seeing the attraction the sirris juice had, and I found it very successful."

Messrs. Davidson and Aitken describe the larva thus (*Journ. Bombay N.H.* V. p. 278): "Larva of the usual form, head very broad, outer pair of horns longest, last segment flat, square, and ending in two points; last pair of legs almost aborted; colour rich, dark green, with a large semicircle of pinkish-white in the middle of the back and a yellow lateral line; horns and sides of face rusty brown. We reared three specimens of this on *Aglais roxburghiana*, a very common tree in Canara, belonging to the order Meliaceae. Among butterflies the length of the larval life seems to be generally proportional to the robustness of the insect in its perfect state; and, as might be expected, *C. imna* is a Methuselah among butterflies. One found on the 6th of October, then evidently a few days old, became a pupa on the 25th of November. The butterfly emerged on the 9th of December. Like most smooth caterpillars, this species eats its skin when cast, but not the head case. When touched it appears to use its horns defensively, as does also *C. athamas*."

b. *Ch. psaphon psaphon*.

Charaxes psaphon Westwood, *Cub. Or. Ent.* t. 21. f. 1. 2. ♂ (1848) (Ceylon); Butl., *Proc. Zool. Soc. Lond.* p. 636. n. 52 (1865) (Ceylon); Nicév., *Butt. of India* II. p. 284. n. 576 (1886) (Ceylon); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 116 (1896) (Ceylon).

Nymphalis psaphon, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 36 (1850) (Ceylon).

Nymphalis polyxena var. *c*, *C. psaphon*, Kirby, *Cat. Diurn. Lep.* p. 272. sub n. 52 (1871) (Ceylon).

♂. *Haridra psaphon*, Moore, *Lep. of Ceylon* I. p. 30. t. 15. f. 2. ♂ (1880) (Ceylon); id., *Lep. Ind.* II. p. 230. t. 168. f. 1. 1a. 1b. 1c. ♂, ♀ (1896) (Ceylon).

♀. *Haridra serendiba* Moore, *Lep. of Ceylon* I. p. 30. t. 15. f. 3. ♀ (1880) (Ceylon).

♂. Black area of forewing barely 3 mm. distant from bar D, measured behind R^3 ; black area of hindwing produced basad along SC^2 to near median bars, the area almost gradually narrowing behind, or suddenly restricted at R^3 , seldom restricted in width behind R^1 as in typical *imna*.

♀. Upperside more brownish tawny than in *imna*; discal band of forewing pure milky white down to (SM^1), very slightly shaded with orange-ochraceous between (SM^1) and SM^2 ; discal band of hindwing mostly a little broader and more white than in *imna*; postdisco-submarginal patches R^1 — R^3 generally somewhat larger than in ordinary specimens of *imna*.

Hab. Ceylon. 8 ♂♂, 3 ♀♀ in the Tring Museum. Moore, in *Lep. Ind.*, records it from Arisvawalle (March), Trincomali (August), Kandy, Kanthalla (October).

13. *Charaxes borneensis*.

Charaxes borneensis Butler, *Lep. Exot.* p. 16. t. 6. f. 2 (1869) (♂ only, Borneo); Druce, *Proc. Zool. Soc. Lond.* p. 346 (1873) (Borneo); Dist., *Rhop. Mal.* p. 433. n. 10. t. 37. f. 6. ♂ (1886) (Mal. Pen.); Hagen, *Iris*. IX. p. 187. n. 247 (1896) (N.E. Sumatra); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 394. n. 128 (1896) (Borneo).

Nymphalis polyxena var. b. *C. borneensis*, Kirby, *Cat. Diurn. Lep.* p. 273. sub n. 52 (1871) (Borneo).
Choraxes (Haridra) borneensis, Nicéville & Martin, *Journ. As. Soc. Beng.* LXIV. p. 437. n. 261
 (1895) (N.E. Sumatra).
Haridra borneensis, Moore, *Lep. Ind.* II. p. 247 (1896) (Mal. Pen. ; Borneo).

♂. *Wings, upperside*, tawny or russet tawny, sometimes much shaded with black.—Forewing: upper angle of cell mostly blackish, generally with some white scales, which occasionally are so numerous as to form a distinct spot; bar D heavy in front; median bars SC⁵—R² joined to the black outer area, seldom isolated, and then obsolete, sometimes also joined to bar D, in which case the white discal band is, between R² and SC^{4,5}, represented by two or four small spots only; median bar R²—R³ close to bar D, with which it is often fused, bars R³—M² always present, arched, the second occasionally small, bars M²—SM² thinner, seldom absent; discal bars all fused with, or joined to, the black outer area, postdiscal interspaces R¹—SM² seldom all marked, then the upper ones minute, more or less white, often only the submedian, double, spot present, seldom all these spots absent; discal interspace white, or slightly yellowish as a rule, this colour mostly extending a little basad along R³—M¹, and M², so that the median bars R³—M² have in most specimens some white scaling at their proximal side; seldom are these bars entirely separated from the tawny area: the white band is distally concave between the veins, the veins themselves more or less black within the band, the partitions R²—M¹ of the band often less than a third the size of partition M²—SM², the band generally not extending beyond SM², but in some individuals there is white scaling also behind SM².—Hindwing: median bars C—R² more or less obvious, with pale tawny or whitish scaling at outside, at least between C and SC², this scaling palest in the darkest individuals; postdisco-submarginal patches varying in size, patches C—R¹ large, but generally ill-defined, the black colour extending basad along veins, about as broad as the interspace between them and the median bars, patches R²—SM² much smaller, separated from one another, the white submarginal dots situated just at their proximal edge or a little within the black patches; the upper white submarginal dots seldom marked; admarginal line brown; the disco-marginal area often much shaded with black, the tawny admarginal interspaces sometimes obsolete; discal lunules faintly indicated in the darkest examples by dark clouds.

Underside very constant in general appearance, blackish bistre brown, outer marginal region pale sepia and olive; sub-basal to median bars conspicuously edged with white, no white discal patches.—Forewing: median bars R³—SM² more or less angle-shaped, bar R²—R³ more proximal than bar R³—M¹; upper postdiscal bars replaced by more or less obvious, but ill-defined, spots.—Hindwing: discal, deeply arched, lunule C—SC² closer to the respective median bar than this is to submedian bar C—SC²; upper two or three submarginal dots absent; upper tail short, triangular, second just indicated.

♀. *Wings, upperside* darker than in ♂.—Forewing: interspace between median bars SC⁵—M¹ and cell filled up with black, of the three black patches thus formed the middle one is much shorter than the others, median bar M¹—M² more proximal than the outer edge of the black patch in front of it, also somewhat dilated; discal band extending to internal margin, where it is, however, shaded with tawny; postdiscal spots R¹—SM² generally larger than in ♂, the upper two or the second sometimes absent.—Hindwing: median bars C—R¹ black, the following ones down to M¹ more or less vestigial; discal bars R¹—SM² marked as dark luniform

clouds, the bars C—R¹ completely fused with the postdisco-submarginal patches ; discal interspaces white or yellowish white in front, this colour shading off behind into tawny, forming an irregular band which extends to near abdominal fold, but is very indistinct behind ; postdiscal-submarginal patches R¹—SM² larger than in ♂, often touching each other, sometimes their postdiscal portions well developed, in which case the linear, white, submarginal spots stand in the centres of the patches, outer edges of the patches (submarginal bars), however, always deeper black than rest of the patches ; admarginal line more distinct than in ♂.

Underside similar to that of ♂, but proximal portions of discal interspaces cream colour, outer marginal region of both wings also much paler than in ♂, the discal lunules bordered with cream colour distally ; submedian interspaces more or less creamy, at least at bars.—Forewing : median bar R³—M¹ much more distal than the bars R²—R³ and M¹—M², interspace between median bars SC⁵—R² and cell coloured like rest of median interspaces.—Hindwing : line of median bars much broken ; postdiscal bars broad, deeply triangularly concave, proximally shading into the raw umber colour of the postdiscal interspaces, bar SC²—R¹ sometimes absent ; upper tail 7 mm. long, not spatulate, second tail just indicated.

Length of forewing : ♂, 41—45 mm.

” ” ♀, 47—50 mm.

Hab. Borneo ; Sumatra ; Malay Peninsula ; much rarer than *Ch. polyxena repetitus* of the same countries.

In the Tring Museum : 5 ♂♂, 2 ♀♀ from Borneo ; 8 ♂♂ from the Gayoe and Battak countries of N.E. Sumatra ; 1 ♂ from the Palembang district, S.E. Sumatra ; 1 ♀ from the Malay Peninsula. The last-mentioned ♀ has the postdisco-submarginal patches of the hindwing larger than the Bornean examples. Dr. Hagen says that he received this insect only from the Gayoe countries in Sumatra, but rather commonly, and that he caught one example at Singapore ; and notes the variability of the specimens as regards the white band of the forewing. Dr. Martin also notices that it was caught only in the forests west and north of Selesseh by the Gayoes, except a few specimens from the Battak Mountains.

14. *Charaxes bupalus*.

Charaxes bupalus Staudinger, *Iris* II. p. 84 (1890) (Palawan, ♂, ♀) ; *Butl., Journ. Lim. Soc. Lond.* XXV. p. 394. n. 127 (1896) (Palawan).

Haridra bupalus, Moore, *Lep. Ind.* II. p. 247 (1895) (Palawan).

♂. Similar to *Ch. borneensis*, but the band of the forewing above is pure white, more regular, sharply limited by the median bars R²—SM² which stand in a regular oblique, row, bar R³—M¹ being less distal than in *borneensis* ; there are no postdiscal spots marked.—Hindwing : median bars C—R² marked, the following one vestigial, there is a little white scaling at bar C—SC² ; postdisco-submarginal patches R¹—M¹ larger than in *borneensis*.

Underside tawny russet, postdiscal interspaces more tawny, the subbasal and submedian bar much less edged with white than in *borneensis*, lines of bars much more regular.—Forewing : median bars R²—SM² continuous, with or without yellowish white patches at their outer side.—Hindwing : median bars SC²—M² nearly continuous, very much closer to discal lunules than to submedian bars ; white submarginal spots linear, heavy, except the third ; admarginal interspaces pale tawny ; admarginal line tawny ; upper tail 4½ mm. long, second a short tooth.

♀. *Upperside*.—Forewing: discal band pure white, broader than in *borneensis*, especially anteriorly; median bars SC⁵—R² within the band, the interspace between them and the cell not filled up with black; median bar R³—M¹ close to apex of cell, with white scaling all round; postdiscal interspaces R¹—SM² white, partly tinged with tawny, somewhat longer than in *borneensis*; some white scales in upper angle of cell and at M² proximally of median bars.—Hindwing: median bars C—M¹ almost continuous, with a white discal band at the outer sides which is broader than in *borneensis*, and shades posteriorly into tawny olive, the white scaling anteriorly almost reaches between the veins the black postdisco-submarginal patches, and extends distad also posteriorly upon the internervular folds; postdisco-submarginal patches becoming gradually smaller behind, the upper two patches not being twice the size of the following two, black scaling produced basad upon veins C—R¹; white submarginal spots linear, heavy; admarginal interspaces brighter tawny than in *borneensis*.

Underside, median interspaces about as dark as in *borneensis*, outer half of wing more or less yellowish cinnamon, postdiscal patches of forewing and outer portions of postdiscal interspaces of hindwing dark tawny olive; discal interspaces more white than in *borneensis*, the white colour also more extended.—Forewing: median bars R²—M¹ continuous, bar M¹—M² a little more proximal.—Hindwing: line of median bars C—M² less irregular than in *borneensis*, with the discal interspaces about half the width of the median ones; admarginal interspaces dark straw-yellow: white submarginal spots linear, heavy, all marked; admarginal line conspicuous; upper tail not, or not distinctly, spatulate, second tail longer than in the allied white-banded *Charaxes*, mostly curved costad as in *antonius*.

Length of forewing: ♂, 44 mm.

” ” ♀, 52 mm.

Hab. Palawan. In the Tring Museum 3 ♂♂, 1 ♀, collected by Dr. Platen and Mr. Waterstradt.

15. *Charaxes plateni*.

♂ ♀. *Charaxes plateni* Staudinger, *Iris* II. p. 82 (1889) (Palawan); Semper, *Tugf. Philipp.* p. 335. n. 517 (1892) (Palawan); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 390. n. 115 (1896) (Palawan). *Haridra plateni*, Moore, *Lep. Ind.* II. p. 248 (1896) (Palawan).

♂ ♀. Body above dark tawny, thorax and head with an olivaceous green tint; underside pale cream-buff, tibiae a little more buff, palpi white.

♂. *Wings, upperside*, dark tawny orange.—Forewing: black outer area extended to apex of cell, the black scaling produced basad along SC to middle of cell, bar D separated from black area by a small tawny spot, inner edge of the area very oblique, crossing SM² about 10 mm. from tip of vein, no tawny spots within black area; cell-bar 3 faintly vestigial.—Hindwing: median bars C—R¹ marked, the following one vestigial, interspace at outer side of bars C—SC² pale tawny orange; discal uniform bars R³—SM² more or less faintly indicated by brown clouds, discal bars C—R³ completely fused with the respective postdisco-submarginal patches, but there are generally some tawny scales left in front of R³; white submarginal dots all developed, but the third often only vestigial; tawny admarginal interspace C—SC² absent, the following one sometimes partly marked; brownish marginal line indistinct.

Underside: creamy white, silvery in side light, outer margin of forewing, and postdiscal interspaces of hindwing olive yellow or yellowish olive, postdiscal

interspaces of the forewing somewhat clouded with the same colour; admarginal interspaces of the hindwing yellowish wood brown to yellowish buff; subbasal and median interspaces more or less pale olive brown; bars rather weak.—Forewing: interspaces between submedian and median bars M^1 —(SM^1) of about equal width.—Hindwing: admarginal line tawny cinnamon, clearly defined; upper tail $4\frac{3}{4}$ to $5\frac{1}{2}$ mm. long, second $1\frac{3}{4}$ mm.

♀. *Wings above* olive tawny.—Forewing: upper angle of cell somewhat blackish, cell-bar 3 vestigial at SC; bar D heavy; median bars SC^2 — SC^2 heavy, upper 2 only $3\frac{1}{3}$ mm. from upper angle of cell, no white scaling at basal side of bars; discal band white, broadest (11 mm.) between R^1 and R^2 , narrowest behind R^2 , extended to C (not to edge of wing), shaded with olive tawny at internal margin of wing, its outer edge sinuate between veins R^2 — SM^2 ; an elongate post-discal, buffish, spot between M^2 and SM^2 .—Hindwing: median bars C— R^3 forming a black continuous line, curving basad, sharply limiting the olive tawny colour of the basal region, crossing R^2 3 mm. from D; a broad white, faintly yellowish, band from costal margin to M^1 posteriorly shading into olive tawny, 9 mm. wide at SC^2 , little narrower behind; discal bars R^1 —(SM^1) clearly defined, continuous, luniform, separated from the black postdisco-submarginal patches by olive tawny interspaces, these interspaces becoming wider behind, interspace SC^2 — R^1 vestigial, discal bar C— SC^2 completely fused with postdisco-submarginal patches; the latter heavy, patches R^1 — M^1 of the same size (7 mm. in diameter), the following one somewhat smaller, all these not separated; white submarginal spots rather heavy; admarginal olive tawny interspaces all developed except the first, anal one filled up with olive buff scaling.

Underside as in ♂; upper tail spatulate, 8 mm. long, second 4 mm.

Length of forewing: ♂, 40—42 mm.

“ “ ♀, 46 mm.

Hab. Palawan, 8 ♂♂. One *female* in Dr. Staudinger's collection. The white underside distinguishes this species from all allies. The most interesting feature of the ♀ is the development of the discal, luniform, bars of the upperside of the hindwing, which do not appear with the same distinctness in any other tawny *Charaxes*.

16. *Charaxes antonius*.

Charaxes antonius Semper, *Verh. Ver. Nat. Unterh. Hamburg* III. p. 113 (1878) (Mindanao); *id.*, *Tauf. Philipp.* p. 80. n. 100. t. 14. f. 6. 7. ♂. 8. ♀ (1887) (Mindanao; non ♀ Guimaras, = *amyceus*); *Batl., Journ. Lim. Soc. Lond.* XXV. p. 389. n. 114 (1896) (Mindanao).
Haridra antonius, Moore, *Lep. Ind.* II. p. 248 (1887) (“Philippines”).

♂ ♀. Body above raw umber colour, head and thorax with an olive-green gloss. Underside brownish sepia colour; palpi cream colour, middle of prosternum and the tibiae and tarsi somewhat darker; femora black with a dense sprinkling of white scales.

♂. *Wings above* glossy tawny olive.—Forewing: black outer area extending to upper angle of cell, strongly narrowing behind, about 9 to 10 mm. wide at SM^2 , its edge not sharply defined, bar D faint, no other bars present, no postdiscal spots.—Hindwing: discal bars vestigial as dark luniform clouds, often extremely faint, upper two fused with the postdisco-submarginal patches; of the latter series the upper four are fused together, and generally also with the admarginal line, patches R^3 — SM^2 isolated, their proximal portions obsolete.

Underside brown sepia colour, variegated with bistre.—Forewing : median bars R²—SM² continuous, median interspace M²—SM² narrower than interspace M¹—M², the darker median band hence narrowing behind, median bars SC⁵—R² somewhat nearer discal series than apex of cell.—Hindwing : interspace between submedian and median lines of bars from costal margin to M resp. R³ narrower than in *borneensis*, upper two median bars CM—SC² nearly continuous ; postdiscal bars slightly arched, or almost straight, standing in a straight line ; upper tail somewhat spatulate, about 8 mm. long, second tail also widened towards apex, curving costad, 6 mm. long.

♀. Wings *above* slightly paler.—Forewing : a white band with a faint tawny olive tint, posteriorly strongly shaded with fawny olive, extends from SC⁴⁵ to internal margin, the band is widest in middle, anteriorly it reaches apex of cell, its outer edge (taken as a whole) is convex, its inner edge ill-defined ; postdiscal spots R³—SM² luniform, separated from discal band by black, thin, discal lunules, postdiscal spots SC⁵—R² about 7 to 8 mm. distant from band ; no median bars SC⁵—R², nor any other median bars.—Hindwing : median C—SC⁵ extremely faint, discal bars C—R¹ ill-defined, partially separated from postdisco-submarginal patches by two light patches : scaling between these discal bars and the vestigial median bars somewhat greyish, veins SC⁶ and R¹ especially pale ; postdisco-submarginal purplish black patches C—R³ gradually decreasing in size, fused, the following four separated, with the postdiscal portions obsolete, the submarginal portions deep black ; submarginal white spots linear, heavy ; admarginal interspaces C—R¹ obsolete.

Underside somewhat paler than in ♂, the submedian and discal interspaces partly creamy buff, but not white ; postdiscal and admarginal interspaces of hindwing greenish bistre ; bars nearly as in ♂, upper three submedian and median bars of hindwing continuous ; upper tail strongly spatulate, 9 mm. long, second almost boot-shaped, curving costad, broadest in middle, about 7 mm. long.

Length of forewing : ♂, 37—41 mm.

” ” ♀, 50 mm.

Hab. North, East, and South-East Mindanao. In the Tring Museum 2 ♂♂, 1 ♀, collected by Dr. Platen (received from Messrs. Staudinger and Bang-Haas) ; May, August to October, December to March, according to Semper.

b⁶. ♂, forewing above blue ; ♀, white band of forewing interrupted at R²

17. *Charaxes mars*.

♂ *Charaxes mars* Staudinger, *Exot. Tagf.* p. 172 (1886) (Minahassa, N. Celebes).

♀ *Charaxes mars*, Oberthür, *Bull. Soc. Ent. France*, p. 194. f. 12 (1897) (Maros country).

♂. *Upperside* of body olivaceous black, sides faintly fulvous, abdomen russet. *Underside* of palpi and abdomen, and four posterior tibiae and tarsi pale drab or wood brown, sterna brownish black.

♂. *Wings above*.—Forewing : strongly glossy greenish blue, changing into bluish green in side light, costal and outer margins black with a slight greenish gloss.—Hindwing also glossy blue, especially if viewed from behind, except base, abdominal fold, and costal margin ; the greater part of the wing tawny orange, cellules C—R¹ nearly totally black, cell more or less shaded with black : postdisco-

submarginal black patches mostly touching admarginal line between veins, white submarginal dots minute or obsolete.

Underside olivaceous slate-colour, with greenish and purplish reflections in side light, glossy except postdiscal interspaces and, on forewing, part of median interspaces; submedian bars edged proximally, median bars distally, with white; postdiscal interspaces mostly somewhat ochraceous at discal bars, this colour more extended anteriorly on forewing.—Forewing: median bars nearly continuous; outer edge of wing glossy to postdiscal, indistinct, bars, glossy band wider in middle than behind; white submarginal scaling visible in a front view, much reduced, except at apex of wing.—Hindwing: bars on abdominal fold obsolete; series of median bars crossing M just at origin of M¹; black and blue submarginal dots present, white ones generally obsolete; admarginal interspaces somewhat brown, narrow, last one yellowish as a rule; admarginal line very thin, not conspicuous, separated from edge of wing; upper tail 5 to 6 mm. long, second a very short tooth.

♀. According to Oberthür's description and cut: *Wings above*: black, slightly bluish, this colour shading off into the brown-yellow colour of the base and external margin; discal interspaces white, forming a broad band from R² to internal margin, the two spots SC⁵—R² more distal and separated; postdiscal interspaces SC⁴—SM² uniform, heavy, not so large as the black discal patches at their proximal side, tawny.—Hindwing: tawny; postdisco-submarginal black patches C—R² large, not completely fused, patches R²—M² about half the size of patch R¹—R³; submarginal white dots all present, upper two largest; median bars C—R¹ marked as black spots, discal interspace occupied by a white band in front, which shades off into the tawny ground-colour; basal area up to median bars tawny brown; admarginal line very thin (as in ♂), partly well separated from the brown edge of the wing; admarginal interspaces all marked, but the upper ones narrow.

Underside paler than in ♂, discal interspaces (except distal portions) white; submedian interspaces partly white; postdiscal interspaces yellowish at discal lunules; tail broader than in ♂, not spatulate.

Length of forewing: ♂, 36—41 mm.

” ” ♀, 48 mm.

Hab. Celebes.

The two specimens of *Charaxes mars* found by Dr. Platen in North Celebes, Minahassa, and those obtained by W. Doherty in South Celebes differ in some details, as most butterflies from North and South Celebes do. This beautiful species does not seem to have been met with by any other explorers than Platen and Doherty. Neither A. Everett nor H. Fruhstorfer came across it during their stay in Celebes.

a. *Ch. mars dohertyi*.

Charaxes mars Staudinger var. *dohertyi* Rothschild, *Iris* V. p. 437, t. 6, f. 2 ♂ (1892) (S. Celebes, Maros country); Oberth., *Bull. Soc. Ent. France* p. 194, f. 12 ♀ (1897) (Maros country, Petoenoeng, Asoewe, July 14. 1896).

♂. *Wings above* on the whole more extended blue than in *mars mars*; hindwing: tawny colour reaching costad beyond R¹, there being a tawny spot in front of that vein, sometimes another before SC², postdisco-submarginal patches R³—M² isolated, patch R²—R² almost isolated, patch M¹—M² about as broad as long.

♀. Description see above.

Hab. South Celebes, 7 ♂♂ : Maros country, W. Doherty, August—September 1892; both sexes in coll. Oberthür caught by W. Doherty between Maros and Tjamba.

b. Ch. mars mars.

Charaxes mars Staudinger, *Exot. Tagf.* p. 172 (1886) (Minahassa); *Butl., Journ. Linn. Soc. Lond.* XXV. p. 396. n. 133 (1896).

♂. Tawny colour of *upperside* of hindwing not reaching in front of R^1 ; black postdisco-submarginal patches all fused together (except dots M^2S-M^2), patch M^1-M^2 elongate, vein R^3 and outer half of M^1 black, tawny admarginal interspaces SC^2-R^2 faintly indicated; tail shorter than in *mars dohertyi*.

♀. Unknown.

Hab. Minahassa, N. Celebes : 1 ♂ in Dr. Staudinger's collection, another in that of Mr. Adams (ex coll. Honrath).

18. *Charaxes madensis* (Nov. Zool. VI. t. 8. f. 4.).

Charaxes madensis Rothschild, *Entom.* XXXII. p. 172. n. 2 (1899) (Mt. Mada, Buru).

♂. Unknown. Most likely resembling that of *Ch. mars*.

♀. Allied to *Ch. mars*. *Upperside*.—Forewing : blackish brown, no blue tone, white discal band broader than in *mars* ♀, farther from cell, its inner edge deeply concave at M^2 , discal bars R^3-M^2 vestigial within band, postdiscal interstitial patches R^3-SM^2 completely merged together with band, while in *mars* they are separate.—Hindwing : band more sharply defined than in *mars*, narrower, white, the blackish brown postdisco-submarginal area much wider than in *mars*, posterior postdisco-submarginal patches not separated from one another, at least four times as wide as in *mars*.

Underside : white scaling of forewing anteriorly more extended than in *mars*, the black median bars are more distal, and the distal ones much feebler; the black submarginal spots of the hindwing are well marked and stand about 4 mm. from the edge of the wing.

Length of forewing : ♀, 60 mm.

Hab. Mt. Mada, Buru, 3,000 ft., August 1898 (Dumas).

The basal costal bar of the hindwing below is not marked in the figure, but is vestigial in the rather damaged specimen.

*b*⁵. Basal to median bars of underside pale chestnut, white band of forewing above narrower behind.

19. *Charaxes ocellatus*.

♀. *Charaxes ocellatus* Fruhstorfer, *Societ. Ent.* XI. p. 108 (1896) (Lombok, 2000 ft.); *id.*, *Berl. Ent. Zeitschr.* XLI. p. 388. t. 9. f. 4. (1897).

♀. *Charaxes sumbanus* Rothschild, *Entom.* XXIX. p. 308 (1896) (Sumba; Sambawa).

♂♀. *Body above* tawny, thorax somewhat olivaceous; *underside* creamy white.

♂. *Wings above* chestnut-tawny, forewing darker than hindwing, outer region of forewing and postdisco-submarginal patches of hindwing black.—Forewing falcate, crossed by an oblique discal band of pure white patches, the band not reaching SM^2 , widest in front, bordered proximally by the median bars R^2-SM^2 and

bar D, median bars SC^5-R^2 within band, bars R^3-M^2 arched, patch M^2-SM^2 very much smaller than the one before it; one or two whitish or pinkish buff postdiscal spots between SC^4 and R^1 about halfway between band and apex, the second spot mostly absent, sometimes both scarcely traceable; internervular folds with buffish longitudinal lines at margin; fringe white except at veins.—Hindwing; median bars $C-R^3$ present, standing in an obliquely curved row, bars R^3-M^2 also often indicated, more proximal than bar R^2-R^3 , a series of patches at the outer side of these bars, the upper one white and largest, the other gradually becoming smaller and more and more tawny; discal bars luniform, dark tawny, or blackish, the upper ones forming the border of the pale discal patches often obsolete, the series strongly and obliquely curved; postdisco-submarginal black patches very large, the upper two always fused together, mostly the upper four not separated, patch SC^2-R^1 10 mm. long, the patches becoming gradually smaller, they are separated from the discal bars by ochraceous halfmoons; white submarginal dots all present, the upper two the largest, the last three sometimes vestigial; admarginal interspaces ochraceous, the last three joined along veins to postdiscal lunules of the same colour, the upper four more restricted, separated between veins into dots, in which case cellule $S-SC^2$ has no such admarginal spots, the black postdisco-submarginal patches being completely fused to the margini-admarginal line, or the spots are not divided at internervular fold; admarginal line touching postdisco-submarginal patches at veins $C-R^3$, extended to edge of wing, black in front, more tawny behind, tails dark tawny or blackish, tips edged with buff or white, fringe white between veins.

Underside fawn-colour, basal to median bars pale chestnut, heavy, basal cell-spot present on both wings.—Forewing: cell-bar 4 touching M closer to M^2 than M^1 , its shorter costal portion curved, about at right angles to the longer and obliquely placed hinder portion: median bars M^2-SM^2 very oblique, reaching SM^2 8 mm. from end, hence median interspace considerably widening behind; white band as above, posteriorly bordered by the discal bars, but as the series of bars is almost parallel to margin it recedes costad more and more from band, the interspace is pale drab; discal bars outwardly bordered with creamy scaling which forms generally halfmoons: postdiscal bars represented by patches of variable and different size, patches M^1-SM^2 black, triangular, the others somewhat chocolate, the submedian ones fused together, but generally incised externally upon (SM^1), patches R^2-M^1 and SC^5-R^1 much smaller, often also patch R^1-R^2 , outwardly the postdiscal spots bear whitish, triangular dots, or greyish lunules, except the last patch, which is bordered externally with a bluish grey, sometimes M-shaped, patch; admarginal interspaces more or less grey.—Hindwing: median series of bars obliquely curved from C to R^3 , then again from R^3 to (SM^1), forming an angle upon R^3 , bars M^2-SM^2 forming an acute angle upon (SM^1) pointing basad, often reaching the angle which is formed by the respective submedian bars and which points distad; basal and subbasal costal bars present; a longitudinal line upon fold SM^2-SM^3 as in *orilus*; SM^2 mostly chocolate in middle; discal interspaces filled up by a white band which is more or less widely separated from the discal lunules by rather well-defined continuous patches of isabella colour; discal and postdiscal bars luniform, the former not prominent, partly obsolete, separated from the postdiscal ones creamy lunules which are somewhat thicker than the discal bars; postdiscal bars chestnut, bars $C-SC^2$ and R^1-R^2 are always patch-like, while bar R^3-M^1 and mostly also bar SC^2-R^1 are thin; submarginal white dots present, but spot R^3-M^1 sometimes

inconspicuous owing to the respective interspace between the black and blue submarginal dot and postdiscal bar being much shaded with cream colour; admarginal interspaces cream-buff, small; admarginal line pale drab; edge of wing greyish between veins; tails pale drab, creamy at tips, both somewhat spatulate, upper 9 to 9½ mm. long, second slightly curved costal, 7 mm. long.

♀. Like ♂, but somewhat larger, forewing above slightly darker in basal half, tails somewhat longer.

Length of forewing: ♂, 38—40 mm.

” ” ♀, 44—50 mm.

Penis similar to that of *Ch. orilus*.

Hab. Lombok, Sambawa, Flores, and Sumba.

This very remarkable insect, discovered by W. Doherty in February 1896 on Sambawa and Sumba, was shortly afterwards also found on Lombok by W. Fruhstorfer. The name of *ocellatus* has two or three days' priority over that of *sumbanus*, and hence must be employed to designate the species.

The close relationship of *Ch. ocellatus* with the very aberrant-looking Timorese *Ch. orilus* becomes apparent on comparison of the coloration of the underside; the penis has also a close resemblance in both insects, its dentition being peculiar to these two species.

a. *Ch. ocellatus sumbanus*.

♀. *Charaxes sumbanus* Rothschild, *Entom.* XXIX. p. 308. n. 1 (1896) (Sumba).

♂ ♀. White band of forewing *above* stopping at SC⁵, with a very few white scales before SC^{4,5}; white patch M²—SM² deeply incised upon (SM¹) at both sides, 5 mm. long, measuring diagonally 6 mm.—Hindwing: series of median bars C—R³ more strongly arched than in the other local forms, pale discal spots R³—M² very indistinct, spots C—R² plainly marked in ♀ only; black postdisco-submarginal patch R³—M¹ not pointed proximally, the postdiscal half-moon-shaped interspaces deeper ochraceous than in the races from Lombok and Sambawa; white submarginal dots M¹—SM² in ♂, and R³—SM² in ♀, minute; admarginal ochraceous interspaces C—R³ not divided into small spots, the uppermost well marked; admarginal line posteriorly and tails rather bright tawny.

Underside.—Forewing; median bar M²—SM² very oblique, posteriorly almost reaching discal bar, discal bar M¹—M² straight, curved only at ends; postdiscal patch R¹—R² little larger than patch R²—R³, patch M²—SM² incised outwardly upon (SM¹), with a bluish grey patch which resembles figure 3.—Hindwing: discal interspace C—SC² wider than median one, median bars C—R¹ more proximal than in the races from Lombok and Sambawa; postdiscal chestnut bar SC²—R¹ patch-like, heavier than patch R²—R³, lunules M¹—SM² about 1 mm. thick in middle, admarginal creamy buff interspaces all well marked.

Length of forewing: ♂, 40 mm.

” ” ♀, 44 mm.

Hab. Sumba: W. Doherty, Febr. 1896, below 2000 ft., 1 ♀; A. Everett, November 1896, 1 ♂.

b. *Ch. ocellatus florensis* Rothschild, subsp. nov.

♂ *Wings, above*.—Forewing: white band somewhat curved owing to patches R³—M² being nearer cell than in the other races, some white scaling in front of

patch $SC^{4.5}-R^1$, patch M^2-SM^2 proximally not incised upon (SM^1), straight or convex, outwardly incised, measuring $4\frac{1}{2}$ to 6 mm. in length, and diagonally 6 to 9 mm., black area extending basad behind SM^2 beyond band.—Hindwing : discal bar $C-SC^2$ obsolescent, white discal patch extending to postdisco-submarginal black patch ; median bars $C-R^3$ more arched than in the other races, bar R^3-M^1 visible, the pale spot at its outer side marked ; postdisco-submarginal patches R^3-M^2 not distinctly isolated, the spots touching each other ; white submarginal dots larger than in *sumbanus* ; admarginal spot $C-SC^2$ absent, spots SC^2-R^3 separated into tiny dots ; admarginal line from R^3 to SM^2 and tail darker than in *sumbanus*.

Underside.—Forewing : median bars M^2-SM^2 3 to 4 mm. from discal bar at SM^2 , slightly produced basad upon (SM^1) into a point ; upper white discal patches more or less pointed outwardly ; discal bars SC^1-M^2 arched, the pale lunules at their distal side conspicuous ; postdiscal patches SC^5-M^1 of about the same size, small, the creamy white dashes or angles at their outer side conspicuous ; greyish white scaling at margin, between veins, also conspicuous.—Hindwing : median bars nearly placed as in *sumbanus*, the series sharply angled upon R^3 ; discal interspace $C-SC^2$ wider between veins than median one ; postdiscal chestnut lunule SC^2-R^1 thinner than patch R^2-R^3 , chestnut halfmoons M^1-SM^2 about 1 mm. thick in middle.

♀. Unknown.

Length of forewing : ♂, 38 to 40 mm.

Hab. South Flores, 2 ♂♂ (A. Everett, November 1896, dry season).

c. *Ch. ocellatus sambavanus*.

♀. *Charaxes sumbanus sambavanus* Rothschild, *Entom.* XXIX, p. 309, n. 2 (1896) (Bima, Sambawa).

♂. Unknown.

♀. *Wings, above*.—Forewing : a broad white costal streak in front of band ; inner edge of patch R^3-M^1 $1\frac{1}{2}$ mm. more distal at M^1 than edge of patch M^1-M^2 , patch M^2-SM^2 strongly convex distally, but incised upon (SM^1) proximally produced basad upon (SM^1) into a point ; internal margin with an indistinct ochraceous patch as continuation of band.—Hindwing : discal patch $C-SC^2$ only $3\frac{1}{2}$ mm. long, discal patches marked down to M^2 , but last one indistinct ; median bars $C-R^3$ blackish as in *florensis*, but not arched or angled ; discal bars dark tawny, not blackish brown ; postdiscal interspaces as pale as the second discal patch, much paler than in *sumbanus* ; postdisco-submarginal patches R^1-M^2 pointed proximally, patches R^3-M^2 isolated ; admarginal spots paler than in *florensis* and *sumbanus*, admarginal line as in *florensis*.

Underside.—Forewing : cell-bar 3 separated into a number of dots ; median bar M^2-SM^2 as in *florensis*, rather more angled upon (SM^1), bar R^3-M^1 1 mm. beyond bar M^1-M^2 , arched, bars SC^5-R^1 much closer to outer edge of white patches than to bar D, interspace between white band and discal bars darker than in *sumbanus* and *florensis* ; discal bars SC^1-M^1 strongly arched, the pale lunules at their outside very conspicuous ; postdiscal patch M^1-SM^2 not incised outwardly, the grey scaling at its outside more restricted than in the preceding forms, postdiscal patch R^1-R^2 larger than patch SC^4-SC^5 .—Hindwing : median bars $C-R^1$ more distal than in *florensis* and *sumbanus*, discal interspace $C-SC^2$ narrower than

median one; postdiscal bar SC^2-R^1 obsolescent, not chestnut, while chestnut halfmoons M^1-SM^2 are heavy, measuring in middle about 4 mm.: white submarginal dots R^3-M^1 clearer defined than in the preceding forms.

Length of forewing: ♀, 50 mm.

Hab. Sambawa: Bima (W. Doherty, February 1896), 1 ♀.

d. *Ch. ocellatus ocellatus.*

♀. *Charaxes ocellatus* Fruhstorfer, *Societ. Ent.* XI. p. 108 (1896) (Lombok, 2000 ft.); *id.*, *Berl. Ent. Zeitschr.* XLI. p. 388. t. 9. f. 4 (1897); *id.*, *l.c.* XLII. p. 6 (1897).

♂. Unknown.

♀. Like *sambavanus*, but the upper discal patch of hindwing *above* is purer white, the other patches of the discal series, especially patches R^2-M^2 , are better marked, the median and discal bars are blacker. On the *underside*, the median bars R^2-M^2 of the forewing are closer to cell, cell-bar 3 is complete, median bars of hindwing thinner than in *sambavanus*, postdiscal chestnut patch $C-SC^2$ smaller.

Length of forewing: ♀, 46 mm.

Hab. Lombok, 1 ♀ (*type*, H. Fruhstorfer) in the Tring Museum.

These differences may be purely individual, but until it is proved that they are so, we must keep the Lombok and Sambawa individuals subspecifically separate.

*b*¹. Forewing above with a narrow, creamy, submarginal band, which does not reach the costal margin.

20. *Charaxes orilus.*

♂. *Charaxes orilus* Butler, *Lep. Exot.* p. 13. t. 5. f. 5 (1869) (Timor); *id.*, *Journ. Linn. Soc. Lond.* XXV. p. 357. n. 20 (1896) (Timor).

♂ ♀. *Body above* olive russet, abdomen more chestnut; *underside* cream colour.

♂. *Wings above*, seal brown, basal area, especially of forewing, washed with chestnut.—Forewing: a submarginal band of creamy patches, anteriorly gradually becoming narrower and fading away, at SM^2 $1\frac{1}{2}$ to 6 mm. broad and close to margin, straight, nearly parallel to edge of wing; creamy white marginal spots between veins, small, sometimes produced proximad as a fine line.—Hindwing: discal bars $C-R^3$ very obscure, just traceable, sometimes with some creamy scales at their distal side, bars R^3-SM^2 mostly better visible, as the interspaces between them and the median bars are generally cream-colour, but the bars are often obsolete, discal bar R^3-M^1 proximal of bent of R^3 ; postdiscal bars much more proximal than in any other *Charaxes*, the upper three patch-like, entirely fused with the brown basal area, bar R^2-R^3 in front of bent of R^3 , luniform, but mostly fused with brown area, as are bars R^3-SM^2 , these latter, however, more distal, bar M^1-M^2 10 mm. from base of M^1 ; submarginal bars represented by black triangular, transverse, spots, of which the upper 4 are somewhat convex proximally and are, between veins, barely 1 mm. distant from the admarginal line, spots R^3-SM^2 smaller; admarginal line complete, rather heavy down to R^3 , thin and often partly obsolete from R^3 to SM^2 ; interspaces between postdiscal and submarginal bars, as well as admarginal interspaces and edge of wing inclusive of tails, yellowish cream-colour, anal region mostly paler, patch $C-SC^2$ also often whitish, admarginal line extended to near tips of all veins; fringe of both wings white between veins.

Underside pale drab or fawn-colour, sometimes ceru drab; basal to median bars light chestnut.—Forewing: basal cell-spot conspicuous, three cell-bars heavy; median bars R^3 — SM^2 in a nearly straight row, almost at right angles to veins, bars R^3 — M^2 curved distad, ends pointing basad, bar R^2 — R^3 about $1\frac{1}{2}$ to 2 mm. from cell, $2\frac{1}{2}$ mm. from bar R^1 — R^2 ; discal interspaces ceru drab at median bars, this colour forming an inconspicuous band of about 3 mm. width, rest of discal interspaces bistre colour; postdiscal bars strongly arched, black, the series turning basad from R^1 to SC^1 ; postdiscal bars represented by patches, of which the submedian ones are black and nearly fused together, while the others are chestnut, patches SC^5 — R^3 and R^2 — M^1 small; these patches followed posteriorly by creamy ones, of which only patches M^1 — SM^2 are clearly marked, while the others become somewhat conspicuous only in consequence of the submarginal luniform bars, which border them distally, being rather obviously marked in this species; tips of veins chestnut; margin with creamy spots between veins.—Hindwing: median series of bars nearly continuous, curving distad in middle, crossing M^1 $2\frac{1}{2}$ mm. from base of vein; basal costal bar and basal cell-spot present, subbasal costal bar also marked, cell-bar 3 sometimes indicated by a dot; submedian bars M — SM^2 forming together an acute angle which points distad, a pale chestnut line along part of fold SM^2 — SM^3 , another, shorter, one behind SM^3 ; discal, strongly arched, bars blackish chestnut, close to median series, the distance being nearly the same from C to M^2 , about 1 to 2 mm. between veins; postdiscal bars halfmoon-shaped, chestnut, the second, fourth and fifth vestigial, all separated from discal bars by pale halfmoons, of which the last three are cream-colour or yellowish cream-colour; the postdiscal spots outwardly shading into drab, this colour much extended between C and R^1 ; submarginal black dots shaded proximally with bluish grey scaling, and the upper three, besides, with drab scales, which form a halfmoon the ends of which point distad, the wide interspace between the series of submarginal and postdiscal spots pale cream-colour; admarginal interspaces buff; admarginal line as above, anteriorly broader; veins brown within pale area; upper tail slightly widened beyond middle, 8 to 9 mm. long, second thinner, faintly curved costad, 6 to 7 mm. long.

♀. Like ♂, larger, wings broader, creamy colour slightly more extended; upper tail 9 mm., second 7 mm. long.

Length of forewing: ♂ 39—44 mm.

“ “ ♀ 47 mm.

Clasper broad, produced into a rather short, evenly curved, slender, but strongly chitinised hook; 10th tergite broadly sinuate, the two processes conical, rather thin; penis with one large tooth standing before the apex and a few minute ones further back (Pl. 8. f. 6.); penis-funnel as in *Ch. marmax*.

Hab. Timor and Wetter.

The most interesting feature of this peculiar species is the development of what is in other species a series of white submarginal dots on the hindwing to a very broad band, necessarily accompanied by a basad movement of the postdiscal bars, which in the other species of this group are fused with the submarginal bars. The submarginal band on the upperside of the forewing corresponds to the white submarginal scaling of the underside found in all the tawny *Charaxes*. Dr. Butler, in his Revision of the genus *Charaxes* put *orilus* between *jabi* and *ethocles* from which it is very different both in structure and pattern. It is like *ocellatus* a member of the *polyxena* group.

a. Ch. orilus wetterensis Rothsch., subsp. nov.

♂. Differs from the Timor race in the marginal spots of the forewing above being larger and the submarginal band wider, the latter measuring at SM^2 5 to 6 mm., the bar separating patch M^2-SM^2 from the creamy marginal spot narrow, and partly suffused with cream-colour; on the hindwing the submarginal spots R^3-SM^2 are smaller than in *orilus orilus*.

Underside drab colour, darker than in the Timor form.

♀. Unknown.

Hab. Wetter, May 1892 (W. Doherty), 3 ♂♂.

b. Ch. orilus orilus.

Charaxes orilus Butler, l.c.

♂. The marginal spots of the forewing *above* minute; submarginal band $2\frac{1}{2}$ to 4 mm. wide at SM^2 , brown bar separating it between M^2 and SM^2 from marginal spot nearly half the width of the band, not partly obsolete.

♀. Like ♂, but submarginal band somewhat wider behind, bar M^2-SM^2 separating it from marginal spot complete.

Hab. Timor: Dili, May 1892 (W. Doherty), 1 ♀; Oinanisa, Dutch Timor, November, December 1891 (W. Doherty), 5 ♂♂.

*d*³. Upperside of hindwing with a band of pale blue postdiscal patches.

21. *Charaxes eurialus.*

Seba, *Thesaurus* IV. p. 57. t. 46. f. 21, 22 (1764) (Ind. or.).

♂. *Papilio Eques Achirus eurialus* Cramer, *Pap. Exot.* I. pp. 116, 153. t. 74. f. A. B (1776) (Amboina); Goeze, *Ent. Beytr.* III. 1. p. 79. n. 36 (1779).

♂. *Papilio Eques Achirus euryalus* (!), Fabricius, *Spec. Ins.* II. p. 20. n. 83 (1781) (Amboina); id., *Mant. Ins.* p. 11. n. 95 (1787); Jabl. & Herbst, *Naturs. Ins., Schmett.* 4. p. 49. n. 147. t. 61. f. 1, 2 (1790) (Amboina); Gmel., *Syst. Nat.* V. 1. p. 2240. n. 324 (1790) (Amboina); Fabr., *Ent. Syst.* III. 2. p. 70. n. 218 (1793) (Amboina).

♀. *Papilio Eques Achirus nisus* Cramer, l.c. II. pp. 85, 150. t. 150. f. A. B (1778) (Amboina); Goeze, l.c. p. 87. n. 67 (1779); Fabr., *Spec. Ins.* II. p. 21. n. 84 (1781) (Amboina); id., *Mant. Ins.* p. 11. n. 96 (1787); Jabl. & Herbst, l.c. p. 51. n. 148. t. 61. f. 3, 4 (1790) (Amboina); Gmel., l.c. n. 325 (1790) (Amboina); Fabr., *Ent. Syst.* III. 1. p. 70. n. 219 (1793) (Amboina).

♂. *Papilio Eques Achirus jasius*, Fabricius, *Syst. Ent.* p. 449. sub n. 29 (1775) (pt.; queried Seba's fig.); Goeze, l.c. p. 51 sub n. 26 (1779) (pt.).

♂ ♀. *Nymphalis nisus*, Godart, *Enc. Méth.* IX. p. 357. n. 23 (1819) (Amboina; *sub synonym*, "nissus" Herbst, "euryalis" Herbst!).

Eriboea euriale (!), Hübner, *Verz. bek. Schm.* p. 47. n. 435 (1816-27).

Nymphalis nisus, Lucas, *Lep. Exot.* p. 120. t. 63 ♂ (1835) (Amboina).

Charaxes nisus, Thon, *Naturng. Schmett.* p. 74. t. 37. f. 545, 546 (1837) (Amboina).

Nymphalis euryalus (!), Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 25 (1850) (Amboina); Kirby, *Cat. Diurn. Lep.* p. 270. n. 34 (1871) (Amboina); Pagenst., *Jahrb. Nass. Ver. Nat.* XLI. p. 93. n. 63 (1888) (Amboina); id., *Abh. Senkenb. Naturf. Ges.* XXIII. p. 403. n. 184 (1897) (Ulyasser).

Charaxes eurialus, Butler, *Cat. Diurn. Lep. descr. by Fabr.* p. 50. n. 3 (1869) (Amboina).

Charaxes euryalus (!), Staudinger, *Exot. Tagf.* p. 171. t. 50. ♀ (1886) (Amboina; Ceram); Ribbe, *Iris* II. p. 239. n. 78 (1890) (Ceram, rare); Röber, *Tijdschr. v. Ent.* XXXIV. p. 308 (1891) (Ceram); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 399. n. 144 (1896) (Amboina).

Charaxes euryalus (!) Cr. ♀ nov. aberr. *abruptus* Frubstorfer, *Soc. Ent.* XII. p. 178 (1898) (Amboina).

♂ ♀. Head, pronotum and anterior part of mesonotum dark chestnut, rest of *upperside* olivaceous black, with a slight chocolate tint. *Underside* chestnut, palpi

and middle of pro- and of anterior portion of mesosternum buff, middle of abdomen ochraceous buff; middle and hinder legs: femora black, with white scaling, tibiae and tarsi dark clay colour.

♂. *Wings above* purplish black, with a slight brown tint.—Forewing: with an oblique series of postdiscal, tawny ochraceous, patches of variable size from SC^5 to internal margin, last spot buff colour, a spot before SC^5 sometimes vestigial; or these spots all absent, but occasionally the last one or two indicated.—Hindwing: postdiscal interspaces filled up by pale blue patches which are fused with the creamy white or yellowish admarginal interspaces to a broad band, which is divided by the thin black veins and includes the black postdisco-submarginal, rounded spots with bluish white centres, proximal edge of band convex between veins, blue scaling C— SC^2 obsolete in most individuals, admarginal black line continuous, heavy.

Underside chestnut, the glossy parts somewhat olivaceous, bars heavy, rather variable in size and position, mostly edged with greenish olive, but if the interspaces between the bars are pale ochre yellow, the respective bars are edged with white; submedian interspaces of fore- and hindwing partly pale ochre yellow in some specimens.—Forewing: discal interspaces sometimes with pale yellow patches at the outer side of the median bars; discal bars halfmoon-shaped, postdiscal ones also luniform but much less conspicuous, the postdiscal interspaces (between these bars) pale yellow, this colour mostly extended between M^2 and SM^2 to near edge of wing, including two black spots, the upper yellow postdiscal interspaces sometimes obsolete; white submarginal scaling forming small patches between veins.—Hindwing: discal and postdiscal black luniform bars strongly arched, the postdiscal halfmoon-shaped interspaces bright chestnut, mostly somewhat yellowish at discal bars; postdisco-submarginal, glossy grey, patches SC^2 — M^2 about equal in size, except patch R^3 — M^1 which is larger, patch C— SC^2 very small; submarginal bars, which form the outer portions of these patches, black; white submarginal dots within patches all present; admarginal interspaces pale ochre yellow, the upper four larger than the glossy grey postdisco-submarginal patches; admarginal line continuous, blackish chestnut; upper tail, $5\frac{1}{2}$ to 8 mm. long, second a short tooth.

♀. *Wings above*.—Forewing: postdiscal pale ochre yellow patches very large, the band of patches either complete, often with the discal interspaces SC^4 — R^3 also pale ochre yellow, or incomplete, the band extending from internal margin to M^2 and then fading away.—Hindwing as in ♂, but the postdisco-submarginal black patches much larger, the blue postdiscal interspaces only partly joined along veins to the pale admarginal ones.

Underside nearly as in ♂, except that the submedian, discal and postdiscal interspaces are more extended yellow, hence the underside appearing more variegated; median bars of forewing closer to the discal ones than in most ♂, bars R^3 — M^1 sometimes touching one another; upper tail broad, $6\frac{1}{2}$ to 9 mm. long, second a blunt tooth.

Length of forewing: ♂, 42—52 mm.

“ “ ♀, 55—65 mm.

According to the development of the band on the forewing above one can separate the individuals into two groups the names of which are:

a. Ch. eurialus ab. *eurialus* (syn.: *abruptus* Fruhst., l.c.).

Band absent or only marked behind in ♂, abbreviated in front in ♀.

b. Ch. eurialus ab. *nisus*.

Band more or less complete in both sexes.

Penis irregularly dentate above near the tip, the series turning lateral proximally and ending in a patch of heavy teeth situated on the right-hand side about 3 mm. from the apex; penis-funnel long, slender, nearly as in *Ch. marmas*.

Hab. Amboina and Ceram. In the Tring Museum 11 ♂♂, 11 ♀♀. Amboina: W. Doherty, February 1892.

*b*¹. Median bar SC⁴—SC⁵ of forewing below much more distal than bars SC⁶—R².

22. *Charaxes varanes*.

Seba, *Thesaur.* IV. p. 43. t. 35. f. 13. 14 (1764).

Papilio Eques Achirus varanes Cramer, *Pap. Erot.* II. p. 100. and 151. t. 160. f. D. E (1777) (Amboina and Coromandel !); Goeze, *Ent. Beytr.* III. 2. p. 87. n. 69 (1779); Fabr., *Spec. Ins.* II. p. 14. n. 55 (1781) (India !); Stoll, in Cramer, *Pap. Erot.* IV. p. 202. t. 388. f. A. B (1782) (Amboina !); Fabr., *Mant. Ins.* II. p. 7. n. 61 (1787); Jabl. & Hbst., *Naturs. Schmetz.* IV. p. 22. n. 133. t. 56. f. 3. 4. 5 (1790) (India !); Gmel., *Syst. Nat.* I. 5. p. 2236. n. 309 (1790) (India !).

Papilio Nymphalis varanes, Fabricius, *Ent. Syst.* III. 1. p. 66. n. 206 (1793) (India !).

Coca varanessa (!), Hübner, *Verz. bek. Schmetz.* p. 48. n. 442 (1816-27).

Nymphalis veranes (!), Godart, *Enc. Méth.* IX. p. 364. n. 48 (1823) (Caffraria).

Phyllophasia veranes (!), Blanchard, *Hist. Ins.* III. p. 448. n. 2 (1840) (pt.).

Phlogonoma varanes, Westwood, in Doubl., Westw. & Hew., *Gen. Diurn. Lep.* p. 311. n. 2 (1850).

Palla varanes, Kirby, *Cat. Diurn. Lep.* p. 274. n. 3 (1871) (pt.).

Charaxes varanes, Butler, *Proc. Zool. Soc. Lond.* p. 176 (1881); Auriv., *Kon. Sv. Vet. Akad. Handl.* XXXI. 5. p. 241. n. 56 (1899) (pt.).

♂♀. *Upperside* of body white; head, pronotum and anterior edge of mesonotum ochraceous buff, often shaded with grey, head with two white dots behind, often also with two pale buff dots before, the antennae; palpi above more or less black; antennae rufous brown or rufous, scaling of inner two-thirds of dorsal and lateral surface black, of outer third white. *Underside* buff yellow, abdomen cream colour.

♂. *Wings above*, proximal area white, shading into pale ochreous or orange tawny on forewing, distal area bright chestnut tawny.—Forewing: costal margin rather strongly curved, outer margin distinctly concave; cell-bars often vestigial, especially bar 3; bar D thin, cleft costally; no submedian bars; median bar SC⁴—SC⁵ 8 to 10 mm. from cell, often fused with the discal band of patch-like bars, median bars SC⁵—R² 2 to 3 mm. nearer the cell, heavier, bar R²—R³ 1 to 2 mm. from cross-vein, often touching bar D, sometimes completely fused with it, bar R³—M¹ somewhat oblique, seldom at right angles to M¹, often angle-shaped or resembling number 3, with the ends pointing basad, 3 to 4 mm. from base of M¹, bar M¹—M² thinner, sometimes abbreviated behind, or vestigial, also oblique, 7 to 8 mm. from base of M², often resembling number 3, with the ends pointing basad, bar M²—SM¹ seldom present (in 8 out of 112 specimens), short; discal bars enlarged to patches, fused with the postdiscal, submarginal and admarginal bars to a disco-marginal area, which includes a series of postdiscal and a series of submarginal ochraceous spots, basal edge of the area triangularly convex between the veins from R² to M², often produced to median bar R³—M¹, and, between R² and R¹, to median bar R¹—R²; postdiscal interstitial spots SC⁵—M² more or less ovate, spots R¹—R³ smaller than the others, no spot, or only a vestige of one, before SC⁵,

more distal than spot SC^5-R^1 , spots M^2-SM^2 small, the last often vestigial or absent, the series about parallel to outer margin, but spot SC^5-R^1 more proximal; submarginal series of interstitial spots almost exactly parallel to margin, smaller than postdiscal spots, spot SC^4-SC^5 more often present than absent, all subtriangular, if large, basally convex or straight, distally rounded; postdiscal bars in most specimens deeper brown than the rest of the outer area, rounded; fringe white at internervular folds.—Hindwing: the white area concave between C and R^2 , then gently convex, reaching abdominal margin about 4 mm. from tip of SM^2 , slightly bluish distally, crossing R^3 at or before its bent; about midway between white area and margin of wing there is a series of postdisco-submarginal, blackish brown, patches, with the centres less dark, situated between C and M^1 , mostly followed by a small spot behind M^4 , the patches variable in size and distinctness; a series of admarginal, blackish brown, lunules, the posterior ones generally more or less obviously edged with glaucous blue distally, admarginal interspaces more or less tawny ochraceous between veins; fringe restricted-white at internervular folds.

Underside: varying in the tint of the ground colour, generally ochreous proximally, more clayish ochraceous distally, but often all clayish ochraceous, clouded all over with black scales, apex of cell of forewing, outer area of both wings, especially at discal line, and abdominal area of hindwing more or less glossy; bars thin, those in basal half very irregular in shape, brownish black, without black borders, but on hindwing sometimes glossy.—Forewing: cell without basal spot, cell-bar 2 arched, ends pointing basad resp. upper end costad, bar 3 interrupted, bar 4 very irregular, but not very variable, its middle portion more distal and bidentate; bar D very thin, vein D^1 varying in length: two submedian bars $M^1-(SM^1)$, continuous, or nearly so, bar M^1-M^2 concave basally, closer to base of M^2 than to that of M^1 ; median bars $M^1-(SM^1)$ 2 to 3 mm. distant from submedian bars, bar M^1-M^2 angle-shaped, the angle pointing basad, 1 to 2 mm. from base of M^1 , median bar R^3-M^1 more oblique, 0 to $1\frac{1}{2}$ mm. from bar D, bar R^2-R^3 about 1 to 2 mm. from bar D, bars SC^5-R^2 generally not continuous, 5 or 6 mm. from apex of cell, bar SC^4-SC^5 2 or 3 mm. more distal; discal bars fused to a rather heavy continuous line, or narrow band, beginning at costal margin 25 mm. from apex, forming a rounded angle between R^1 and R^2 , where it is about 11 mm. distant from outer margin, and being parallel to outer margin from R^3 to internal edge of wing, the line often bordered distally with clayish grey, somewhat silvery scaling; a series of black or blackish postdiscal patches or dots, the posterior ones often obsolete, all placed in circular buff patches, which are often quite indistinct; between discal line and postdiscal patches there is often an indistinct brown line.—Hindwing: basal costal bar arched, pointing distad, not reaching C; costal subbasal bar absent, subbasal bar C— SC^2 absent, or represented by a small dot in angle between C and SC^2 , subbasal cell-bar concave basally, followed by a short bar M— (SM^1) or M— SM^2 , which is often more distal, subbasal bar SM^2-SM^3 more distal again, its upper end pointing distad and often reaching the upper end of the respective submedian bar; submedian series of bars also not quite continuous, that within cell forming two angles which point distad; costal median bar more proximal than median bar C— SC^2 , the upper part of the latter more distal than the posterior part, bars SC^2-R^3 gradually a little more distal, bar R^2-R^3 touching R^3 close to its origin, bar M^1-M^2 before origin of M^1 , bar $M^2-(SM^1)$ 1 or 2 mm. more distal, often joined to submedian bar $M^2-(SM^1)$ along (SM^1) , median bar $(SM^1)-SM^2$ often joined to respective submedian bar in a similar way; discal bars fused to a heavy line or narrow band as on

forewing, the line straight, crossing R^3 2 to 3 mm. from its origin, beginning at costal margin 8 to 10 mm. from tip of C and reaching abdominal margin close to anal angle, barely $\frac{3}{4}$ mm. broad; a postdisco-submarginal series of pale ochraceous rings, parallel to outer margin, bordered proximally with chestnut tawny; within the rings are the blackish postdiscal bars, of which bars SC^2-M^1 are absent or represented by dots, and the submarginal bars represented by dots, central parts of rings occupied by white scaling, which is conspicuous in rings M^1-SM^2 ; a series of indistinct pale ochraceous lunules often between discal line and postdisco-submarginal rings; black admarginal lunules short, but distinctly transverse, if not obsolete, bordered white distally, especially the posterior ones, with pale ochraceous half-moons at proximal side, which halfmoons often touch between veins the pale ochraceous postdisco-submarginal rings, often reducing the interspaces to diamond-shaped patches; tail R^3 broad, of even width, or slightly spatulate, about 6 to 8 mm. long, tail M^2 represented by a blunt angle.

♀. Larger than ♂, white basal area of forewing above more extended, *underside* occasionally pale olive, with a greenish tint; tail longer, and broader at tip.

Length of forewing: ♂, 36—45 mm.

„ „ „ ♀, 39—50 mm.

Penis much thinner than in all the preceding species: one tooth of variable size about 1 mm. from end, followed proximally by a few more very small ones: penis-funnel slenderer than in *marmax*, its upperside convex at tip; clasper (Pl. S. f. 24.) rather slender, the apical hook broad, concave on the upperside.

Hab. Africa south of the Sahara, from Senegambia and Abyssinia to the Cape Colony.

Cramer's figure in *Pap. Exot.* II. represents undoubtedly this species, but is not exact enough to enable us to say which of the forms described below the figure must be referred to. Cramer gives Amboina and Coromandel as locality!

Ch. varanes varies considerably, especially on the underside; while the individuals from South Africa are different on the upperside from the remainder of the species, and, therefore, are kept subspecifically separate in this monograph, the specimens from tropical East and West Africa do not seem to us to have developed into an Eastern and a Western race. But *Ch. varanes* from the East Coast is by no means the same as *Ch. varanes* from the western forest region. On the former country the underside presents similar variation, as does the underside of the South African race, there being three forms distinguishable: one with the wings irrorated with clouds of black scales, a second without this irroration and with the bars clearly marked, and a third with the ground of wing deeper in tint and the bars accordingly fainter; the second and third forms run into one another. In West Africa only the second form occurs.

The trichromatism in the South and East African *Ch. varanes*, which is best marked in the individuals from Cape Colony and Natal, may be the outcome of seasonal changes in the environment, the one extreme form looking more like a withered leaf, the other extreme more like a fresh leaf; but the data at our disposal are not sufficient to allow us to express an opinion on the question, whether those three forms, or at least the most different ones, are confined to certain seasons, or whether the differences in the individuals mean simply individual variability independent of the season of the year. It will be difficult to settle the question without careful observations on the spot, as even material with exact data, day of capture, locality, altitude, will not tell us much if it does not comprise a long series of

specimens from the same place from all times of the year. The climate in East Africa is often locally so different, that individuals caught on the same day, but a few miles apart, may have passed the chrysalis state under very different climatological conditions. The few dated specimens we have in the Tring Museum are recorded below.

The larva and chrysalis of the South African subspecies are described by Trimen (see below).

a. Ch. varanes austrinus Rothsch., subsp. nov.

(?) *Papilio Eques Achivus varanes* Stoll, in Cramer, *Pap. Ecot.* IV. p. 202. t. 388. f. A.B (1782) (Amboina!).

Nymphalis ceranes (!), Godart, *Enc. Méth.* IX. p. 364. n. 48 (1823) (*syn. pro p.*; Caffraria); Lucas, *Lep. Es.* p. 123. t. 65. f. 1 (1835) (Caffraria).

Philognama varanes, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 311. n. 2 (1850) (pt.; Caffraria); Trim., *Rhop. Afr. Austr.* p. 181. n. 105 (1862—66) (*syn. pro p.*; Knysna; Natal; Pt. Elizabeth; King Williamstown; Grahamstown).

Palla varanes, Staudinger, *Ecot. Tagf.* p. 174. t. 60 (1886) (pt.; Natal).

Charaxes varanes, Trimen & Bowker, *S. Afr. Butt.* I. p. 321. n. 105 (1887) (pt.); Butl., *Journ. Linn Soc. Lond.* XXV. p. 400. n. 149 (1896) (pt.); Dist., *Ann. Mag. N. II.* (7). I. p. 51 (1898) (Barberton); Auriv., *Kongl. Sc. Akad. Handl.* XXXI. 5. p. 241. n. 56 (1899) (pt.).

Charaxes fulvrescens, Karsch (non Aurivillius, 1891), *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 57 (1893) (*sub synonym.*); Auriv., *Ent. Tidskr.* XV. p. 312. n. 202 (1894) (*sub synonym.*).

♂♀. White colour of base of forewing reduced to a small patch at internal margin which seldom extends to M², distally never extending to discal tawny chestnut patches; on hindwing the white area does not quite reach the bent of vein R³. Three forms according to coloration of underside:—

*a*¹.

♀ ♂ (type of subspecies, from Natal), apex of cell of forewing and outer marginal area of both wings conspicuously glossy; veins prominently green; discal line heavy, bordered with greyish white outwardly, bars in basal half feebly marked, partly absent, markings in outer region also partly obliterate or vestigial.

This form is common enough in Natal; we possess, however, only one specimen from there with date (Durban, March). A second dated specimen (♀) from Zululand, Makuri Hill, was caught in May; it has the forewing more extended white than our Natal specimens have, but agrees in the greenish olive tint of the underside with a number of ♀♀ from that country.

*b*¹.

♂. Underside pale clayish ochreous in basal half, bars prominent, ocelli of hindwing all well marked, as are the other markings of the marginal area.

Some specimens of the *male* sex only from Natal, without date of capture.

*c*¹.

♂♀. Underside irregularly irrorated all over with black scaling, apex of cell of forewing devoid of black scales (or almost so), bars generally rather heavy, as are the postdiscal spots of forewing and ocellate patches of hindwing, ♀ paler in ground colour than ♂, less tawny.

A series of individuals of both sexes from Natal and Cape Colony; no dates.

Hab. Cape Colony: Natal; Zululand; Transvaal.

The larva and pupa are described by Mr. Trimen, *loc.*, as follows:—

“Larva.—Dull bluish-green above; pale whitish-green beneath, irrorated with very minute silvery dots. On the sixth, eighth, and tenth segments, a pale-ochreous, somewhat crescentic, mark on the back,—that on the tenth segment very

faint and only found in full-grown specimens. A thin, sinuated, silvery lateral stripe. Head flat, armed with four backward-sloping, recurved, somewhat serrated horns, bright turquoise-blue beneath, and in young specimens edged with reddish. Anal segment flattened, bifid. Feeds on a species of *Rhus* (probably *R. laevigata*).

"Pupa.—Pellucid blue-green with a delicate plum-like bloom. On each side of abdomen a row of six black dots. On anal pedicel two pairs of small yellowish tubercles, and a similar pair on ventral surface, close to pedicel, facing towards the head."

Mr. Trimen continues to say:—"This very fine butterfly is common in the wooded parts of South Africa, and is very conspicuous on the wing. At rest, it is by no means easy to detect, its undersurface colouring being so like faded or withered leaves, and its accustomed seat being on the stems or among the branches. Its flight is not so rapid as that of several of its near allies, and it often descends to sport about low trees and even bushes. The exuding sap from wounds of trees is very attractive to it; and I once enticed a specimen by honey smeared on a trunk at Plettenberg Bay. The species seems to be out during every month of the year, but is numerous only during the warmer season.

"The South African examples differ from those I have examined from different parts of Tropical Africa in having the basal white of the forewing so much restricted. They are, however, variable in this particular, some females exhibiting a small inner-marginal white patch, extending as far as median nervure; but none that I have seen present nearly so much white as is found in specimens from Cape Coast Castle and Sierra Leone on the West Coast, or Quilimane and Zambesi on the East Coast, in which, in both sexes, the white largely invades the discoidal cell and in the ♀ nearly fills it. In the hindwing, also, the white in the Tropical examples is extended to a point considerably nearer anal angle."

b. *Ch. varanes vologeses*.

Phlognoma varanes, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* p. 311. n. 2 (1850) (pt.; Sierra Leone; Ashanti); Butl., *Cat. Diurn. Lep. descr. by Fabr.* p. 50. n. 3 (1869) (S. Leone); Plötz, *Stett. Ent. Zeit.* XLI. p. 194. n. 107 (1880) (Victoria, Camer., VI. VIII.); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 63 (1889) (Kassai); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 90 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story of Rear Coburn* p. 441. n. 90 (1890) (Congo); Hamps., *Ann. Mag. N. H.* (6). VII. p. 181 (1891) (Sabaki R.); Sharpe, *Proc. Zool. Soc. Lond.* p. 341. n. 47 (1894).

Palla vologeses Mabille, *Bull. Soc. Zool. France* I. p. 280 (1876) (Congo; Landana).

Palla varanes Kirby, *Cat. Diurn. Lep.* p. 274. n. 3 (1871) (pt.); Staud., *Exot. Tagf.* p. 174 (1886) (pt.); Butl., *Ann. Mag. N. H.* (6). VII. p. 42. n. 13 (1891) (E. Afr.); Auriv., *Ent. Tidskr.* XII. p. 216. n. 148 (1891) (pt.; Cameroons, Gaboon); Holl., *Proc. N. S. Nat. Mus.* XVI. p. 571 (1893) (Freetown); Butl., *Proc. Zool. Soc. Lond.* p. 650. n. 26 (1893) (Lake Mweri; Zomba, January); id., *l.c.* p. 562. n. 18 (1894) (Brit. E. Afr.); Reb. & Rogenb., in Baumann, *Massailand zur Nilquelle* p. 332. n. 95 (1894) (Mwansa; Ufioni); Holl., *l.c.* XVIII. p. 262 (1895) (E. Afr.); Lanz, *Iris* IX. p. 143 (1896) (Parumbira, Oct.).

Charaxes varanes, Trimen & Bowker, *S. Afr. Butt.* I. p. 321. n. 105 (1887) (pt.); Trim., *Proc. Zool. Soc. Lond.* p. 39. n. 59 (1894) (Manica, Mimemi); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 400. n. 149 (1896) (pt.); id., *Ann. Mag. N. H.* (6). XVIII. p. 69. n. 7 (1896) (Nyassa); id., *Proc. Zool. Soc. Lond.* p. 256. n. 21 (1898) (Zomba); id., *l.c.* p. 397. n. 11 (1898) (Brit. C. Afr.); Auriv., *Konigl. Sv. Vet. Akad. Handl.* XXXI. 5. p. 241. n. 56 (1893) (pt.).

Palla (Charaxes) varanes, Schaus & Clements, *Sierra Leone Lep.* p. 9 (1893) (S. Leone).

♂ ♀. White area of forewing *above* occupying at least half the cell, extending beyond M² and coming posteriorly near the chocolate tawny outer area or touching

it; in ♀ the cell is often all white; on hindwing the white area reaches the bent of R³.

On the whole the West African specimens have the outer half of the upperside a little deeper in tint than the East African individuals.

Three forms in East Africa, one of them only in West Africa.

*d*¹.

♂ ♀. Underside clayish tawny, the bars feebly marked, partly obsolete, discal line heavy, markings in outer region feeble, except ocellate patches C—SC² and M¹—SM²; gloss in outer region prominent. The underside is apparently never olive as in certain South African specimens.

Common in East Africa. In the Tring Museum from Port Alice, Uganda, July 3rd and 19th, 1894 (Dr. Ansonge); Kibwezi, Brit. E. Afr., April 7th, 1894 (Dr. Ansonge); Dar-es-Salaam, Germ. E. Afr.; Delagoa Bay; Zomba, October—December 1895 (Dr. Rendall).

*e*¹.

♂ ♀. Underside paler, bars prominent, markings in marginal area better defined.

The difference between form *e*¹ and *d*¹ is not so marked as in the case of the corresponding forms of *Ch. varanes austrinus*.

In the Tring Museum from Parumbira, Lake Nyassa, October 23rd and 24th, 1894 (Dr. Ansonge); Delagoa Bay; Chipaika Estate, near Bandawa, Nyassaland (Watkinson); Ft. Johnstone, January—February 1896 (Dr. Rendall); Dar-es-Salaam, Germ. E. Afr.; Mikindani, Germ. E. Afr., January—May 1897 (Reimer); Mombasa, Brit. E. Afr.; Mazera's, Brit. E. Afr., March 12th, 1895 (Dr. Ansonge); Pabo, Unyoro, July 24th, 1897 (Dr. Ansonge); Hoima, Unyoro, August 12th, 1897 (Dr. Ansonge); Salomona, Eritrea, November—December 1897 (Schrader); Bogos, Abyssinia (Hansal); and all over West Africa from Senegambia to Angola.

*f*¹.

♂ ♀. Underside irrorated with black scaling.

In the Tring Museum from Masindi, Unyoro, April 14th, 1897 (Dr. Ansonge); Mombasa; Mikindani, January—May 1897 (Reimer); Dar-es-Salaam; Delagoa Bay; Chipaika Estate, near Bandawe, Nyassaland (Watkinson).

23. *Charaxes fulvescens*.

Papilio Nymphalis Gemmatus varanes, Drury (non Cramer, 1777), *Illustr. Ex. Ins.* III. p. 42 and Index (1782) (S. Leone).

Nymphalis veranes (!), Godart, *Enc. Méth.* IX. p. 364. n. 48 (1823) (pt.).

Phyltophasis veranes, Blanchard, *Hist. Nat. Ins.* III. p. 348. n. 2 (1840) (pt.).

Phlogonoma veranes, Westwood in Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 311. n. 2 (1850) (pt.).

Palla varanes, Kirby, *Cat. Diurn. Lepid.* p. 274. n. 3 (1871) (pt.); Mab., *Bull. Soc. Zool. France* I. p. 280 (W. Afr.).

Palla varanes var. *fulvescens* Aurivillius, *Ent. Tidskr.* XII. p. 216. sub n. 148 (1891) ("type" Drury's fig.).

♂ ♀. Differs from *Ch. varanes* as follows:

Wings, upperside: basal area buffish maize yellow, not milky white, on hindwing creamy white at base and in abdominal fold; outer area darker than in *varanes*, blackish chestnut on forewing at costal and outer margins.—Forewing: apex more rounded, outer margin less concave; median bars more distal than in *varanes*,

bar R^3 — M^1 6 to $7\frac{1}{2}$ mm. from base of M^1 , bar R^2 — R^3 $1\frac{2}{3}$ to $2\frac{1}{2}$ mm. from cross-vein D^3 , never touching bar D , which is obsolete behind; discal patches R^3 — SM^2 tawny chestnut, much paler than the postdiscal patches and the marginal area; postdiscal yellowish buff interstitial spots smaller than in *varanes*, spot SC^4 — SC^5 often present, double spot M^2 — SM^2 often obsolete; submarginal interstitial spots also smaller, often minute, seldom nearly all absent, extreme outer edge tawny, fringe not distinctly white between veins, though there are occasionally a very few white scales at the internervular folds on the underside.—Hindwing: the creamy basal area posteriorly less extended than the white area of *varanes*, and also less well defined, gradually shading into the outer area: discal line of underside showing through, anteriorly generally marked by tawny scaling; postdisco-submarginal round patches nearly black, variable in size, seldom with a white dot inside; brownish black admarginal bars larger than in *varanes*, less arched, the upper four larger than the last three, margin outside these bars and tail distinctly paler than admarginal area, creamy at upper angle; tail not spatulate, broader at base than in *varanes*, hence margin more oblique from tail to anal angle, tooth at M^2 generally less obvious than in *varanes*.

Underside: ground colour pale straw yellow, much shaded with clay colour; bars black, thin, prominent on account of the pale ground colour, with a thin, glossy, whitish border in side-light: discal line less black, more dark clay colour.—Forewing: discal line more sharply angled before R^2 than in *varanes*, and more concave behind, its costal part often broken up into spots; in most specimens the postdiscal spots represented by sharply marked dots; median bars R^3 — SM^2 in *varanes* at about equal distance from discal line, in *fulvescens* bar R^3 — M^1 farther away from the line than bars M^2 — SM^2 .—Hindwing: proximal border of ocellate postdisco-submarginal spots not chestnut, but tawny olive, black ring of upper ocellus heavy, sharply marked also distally, submarginal black bars of ocelli SC^2 — M^1 generally represented by a tiny, but conspicuous, black dot, central parts of ocelli M^1 —(SM^1) all white, not shaded with ochraceous; admarginal black spots much smaller than in *varanes*, but sharper defined, more obvious, with or without tiny white spots at distal side which are never distinctly transverse as in *varanes*; fringe with dispersed white scales, especially behind tail; no white spots at internervular folds.

Length of forewing: ♂, 39—48 mm.

„ „ ♀, 48—54 mm.

Penis and penis-funnel as in *Ch. varanes*: clasper constantly different; the apical tooth thinner, more curved, its upper surface less concave (Pl. 8. f. 25).

Larva and chrysalis unknown, most likely not essentially different from those of *Ch. varanes*.

Hab. West African Forest Region, from Sierra Leone to Angola and Uganda.

Ch. fulvescens is constantly different in the characters of the wings and claspers from *varanes*, and there are no intergradations. The two insects occur together in the same place at the same time of the year, as our material proves; hence *varanes* and *fulvescens* can neither be geographical nor seasonal varieties. Against there being forms of a dimorphic species tell the following facts: (1) that two insects are distinguished by differences in the claspers of the ♂♂; (2) that the differences presented by the wings are found in both sexes, without there being any intergradations between the two insects; (3) that *fulvescens* does not occur in East Africa proper, though *varanes* of West and East Africa are not subspecifically separable.

We do not see any reason for the assumption that *fulvescens* is a variety of *varanes*; everything points to its being independent of it.

We recognise two geographical races, which are connected by intergradations occurring in the intermediate countries.

a. Ch. fulvescens fulvescens.

Papilio Nymphalis Gemmatus varanes Drury, *l.c.* (Sierra Leone).

Palla varanes var. *fulvescens* Aurivillius, *l.c.*

Charaxes fulvescens, Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 57 (1893) (*syn. pro p.*; Adeli, Togo); Auriv., *l.c.* XV. p. 312. n. 202 (1894) (Bonge, Cameroons, Nov., Dec.).

Charaxes nigrescens Butler, *Journ. Linn. Soc. Lond.* XXV. p. 401. n. 150 (1896) (Sierra Leone; Gold Coast; Ashanti).

Charaxes varanes var. ? (ab. 1) *nigrescens*, Aurivillius, *Kongl. Sv. Vet. Akad. Handl.* XXXI. 5. p. 241. n. 56 (1899).

Charaxes varanes var. (temp. ?) (ab. ?) *fulvescens*, *id., l.c.* (1899) (pt.).

♂ ♀. *Wings above.*—Forewing: pale basal area reaching to origin of M² or beyond, shading distally into orange ochraceous; postdiscal and submarginal interstitial spots orange ochraceous.—Hindwing: basal area whitish cream-colour behind, gradually shading into the outer area.

Underside: ground colour very pale straw yellow in basal area.

Hab. Sierra Leone to Gaboon. In the Tring Museum from: Sierra Leone, 5 ♂♂, 1 ♀; Gold Coast, Accra, 33 ♂♂, 4 ♀♀; Agawasso, middle of July 1897. 4 ♂♂; Warri, Niger Coast Protectorate, caught in March, April, May, June, August, and September (Dr. Roth), 9 ♂♂, 4 ♀♀; Cameroons, 2 ♂♂.

Individuals from Gaboon and the Cameroons approach the next subspecies.

b. Ch. fulvescens monitor Rothsch., *subsp. nov.*

Charaxes fulvescens, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 401. n. 151 (1896) (pt.; Congo).

Charaxes varanes var. (temp. 1) (ab. ?) *fulvescens*, Aurivillius, *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 241. n. 56 (1899) (pt.; Congo).

♂ ♀. *Wings above.*—Forewing: basal area not quite so pale as in *nigrescens*, shading on disc into tawny orange ochraceous; postdiscal and submarginal interstitial spots more tawny than in *fulvescens*.—Hindwing: basal area more white, better defined, posteriorly more restricted, the outer area darker, especially in anal region; black admarginal spots large.

Underside more clay colour than in *fulvescens*, in ♀ with a greenish olive tint.

Hab. Congo: Upoto (Rev. Oram), 3 ♂♂, Kassai country, 2 ♂♂. Fajao, Unyoro, July 11th (*type!*) and 16th, 1897 (Dr. Ausorge), 2 ♂♂, 1 ♀; Monyonyo, Unyoro, March 18th, 1897 (Dr. Ausorge), 1 ♂; Pt. Alice, Unyoro, March 3rd, 1894, and July 3rd, 1897 (Dr. Ausorge), 2 ♂♂; Mtebe, Uganda, July 30th, 1894 (Dr. Ausorge), 1 ♀; Kampala, Uganda, March 21st, 1897 (Dr. Ausorge), 1 ♀.

The specimen from Monyonyo has a distinct white dot in the first black postdisco-submarginal patch of the upperside of the hindwing, and traces of such dots also in the other spots.

24. *Charaxes balfouri* (Nov. Zool. VII. t. 11. f. 3, ♂).

Charaxes balfouri Butler, *Proc. Zool. Soc. Lond.* p. 176. t. 18. f. 6 ♀ (1881) (Socotra); *id., Journ. Linn. Soc. Lond.* XXV. p. 400. n. 148 (1896) (Socotra); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 241. n. 55 (1899) (Socotra).

♂ ♀. Body above chestnut-hazel, antennae the same colour, paler at ends, their scales also chestnut except those on outer surface, which are white; *underside* clayish creamy buff.

♂. *Wings above* : basal area hazel-chestnut, gradually shading into the reddish chestnut outer area, which has a maroon purple tint, especially on hindwing.—Forewing : similar in markings to *Ch. varanes*, but postdiscal spots rather smaller, hence the series of postdiscal and submarginal interstitial spots closer together, these series of spots either of nearly the same colour as the base of the wing, or tawny ochraceous ; outer edge scalloped ; fringe white except at ends of veins.—Hindwing : of the postdisco-submarginal series of brownish black spots of *Ch. varanes* only the upper two are marked, small, the others vestigial or absent ; two white submarginal dots between M^2 and SM^2 more or less conspicuous ; black admarginal lunules large ; interspaces between them and fringe bluish white ; fringe buff ; edge of wing conspicuously scalloped.

Underside bistre brown, bars in shape and position similar to those of *Ch. varanes*.—Forewing : bar D complete, with a white proximal border which gradually fades away proximally ; discal line as strongly angled as in *Ch. fulvescens*, slightly concave between R^2 and M^1 , then somewhat convex, with a heavy white outer border from SC^3 to (SM^1), the white scaling occupying the whole area between discal line and postdiscal dots, but gradually sparser distally.—Hindwing : discal line convex, very slightly broken at some of the veins, two upper partitions somewhat concave, with a heavy white outer border which is sharply limited between C and SC^2 and again between M^1 and SM^2 , while between SC^2 and M^1 it is much broader and gradually fades away, the postdiscal-marginal area thinly shaded with white scaling ; eye-spot C— SC^2 sharply marked, composed of a white centre surrounded by three rings ; blackish brown, bistre, dark chestnut, eye-spots SC^2 - M^1 vestigial, the centres of spots M^1 — SM^2 white, transverse, the proximal portions of the wings of these latter spots marked or obsolete, the distal portions obsolete ; black admarginal spots heavy, but widely separate, with heavy, transverse, white outer borders ; edge of wing buff and fringe white, except at extremities of veins ; tail of even width, not distinctly spatulate, narrower than in *Ch. varanes*, 6 to 7 mm. long, tooth M^2 prominent.

♀. Similar to ♂, ground colour paler, the reddish chestnut colour of the upperside less extended.

Length of forewing : ♂, 36—40 mm.

„ „ ♀, 42—45 mm.

Sexual organs similar to those of *Ch. fulvescens* and *varanes*, clasper resembling more that of *fulvescens*.

Hab. Socotra. In the Tring Museum 3 ♂♂, collected by O. Grant at 1500 and 3000 ft., January 22nd and 24th and February 7th.

b. Discal line of hindwing below deeply biconcave, a sharply defined, pale buff, postdisco-submarginal ring C— SC^2 .

25. *Charaxes analava* (Nov. Zool. VII. t. 11. f. 1, ♂).

Charaxes analava Ward, *Entom.* IX. p. 3 (1872) (Madagascar) ; Mab., in Grandid., *Hist. Mad.* XIX. 2. *Lep.* I. p. 194. t. 25a. f. 2. 2a (1885) (Madagascar) ; Butt., *Journ. Linn. Soc. Lond.* XXV. p. 369. n. 47 (1896) (Antananarivo) ; Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 241. n. 54 (1899) (Madagascar).

♂. Body *above* cream colour, head, collar, and anterior part of mesonotum ochraceous buff, seldom smoky brown, palpi without black dorso-lateral stripe, antennae green, with creamy scales ; *underside* cream colour, or creamy buff, breast

with buff or black oblique stripes underneath legs, sides of metasternum same colour as the stripes, upperside of femora also buff or black.

♂. *Wings above*: Naples yellow, changing into buff yellow in anal region of hindwing.—Forewing: outer area from apex of cell to margin black, this area narrowing posteriorly, about 8 to 10 mm. broad at SM^2 , its inner margin convex between veins, no separate submedian and median bars, basal area mostly a little extended distad beyond lower angle of cell, but lower end of bar D then obsolete or very thin; the black area includes, as in *Ch. candiope*, a series of postdiscal interstitial spots of the same colour as the basal area, spot SC^4-SC^5 absent, the next one about 2 to 3 mm. in length, spots R^1-R^3 minute, especially the upper of the two, spots R^3-M^2 larger than the others, diameter about $2\frac{1}{2}$ to $3\frac{1}{2}$ mm., spots M^2-SM^2 small, close together at (SM^2), mostly fused to one spot; outer edge of wing concave, scalloped, marginal dots small; discal interspaces SC^5-R^2 somewhat closer to cell than in *Ch. candiope*, varying in width, $\frac{1}{4}$ to $\frac{1}{2}$ as wide as the black area between them and apex of cell.—Hindwing: postdisco-marginal black band from C to R^3 , continued behind by dispersed black scales and the slightly curved admarginal bars R^3-M^2 and the two dots near anal angle, the band stopping in front at C, but its outer portion sometimes extended to costal margin; the band consists of the postdisco-submarginal eye-spots, the admarginal bars, and the interspaces between, the latter often less deep black than the eye-spots and bars; the eye-spots R^3-M^2 often vestigial, upper three marginal buff lunules well separated, posterior ones less so, because here the ends of the veins are not deep black, but clayish, shaded with few black scales; outer edge deeply scalloped, anal angle not triangularly produced, while the outer margin is more produced at R^3 than usually, hence the wing somewhat pentagonal, with three tails.

Underside: veins green; greenish olive cinnamon from base to irregular discal line, darker near the latter, much variegated with white; black bars thin, but sharply defined in basal two thirds.—Forewing: base of costal margin white, cell with three black bars, first short, bordered with white basally, second before middle, reduced to a short streak behind SC which is placed into a straight, heavy, white bar, third bar thin, complete, straight, faintly irregular, oblique, reaching M at or before base of M^1 , mostly nearly parallel to bar D, apex of cell all white; submedian bar M^1-M^2 present; median bars SC^3-M^2 conspicuous on the dark ground on account of their white proximal borders, bar M^1-M^2 2 to 3 mm. from base of M^1 , slightly incurved, bar R^3-M^1 oblique, posteriorly more distal than the bar behind it, anteriorly touching lower angle of cell, bar R^2-R^3 in front of it, bars $SC^{13}-R^2$ 6 mm. from cell, a little nearer to the cell than to the discal line, at right angles to veins, or slightly inclining basad; interspaces between median bars R^3-M^2 and cell respectively submedian bar M^1-M^2 buff cinnamon; discal bars fused to a continuous line which begins at costal margin 12 to 14 mm. from apex, is strongly convex behind R^1 , then irregularly concave down to beyond M^2 , the posterior portion more distal, slightly oblique, straight, reaching SM^2 4 to 5 mm. from tip of this vein, distally this line is bordered white (except beyond M^2), the white colour shading into the cinnamon buff postdisco-marginal area; postdiscal bars represented by a series of minute dots, spot SC^4-SC^5 only being larger, ovate, all surrounded by some grey scaling, internal marginal area from base to near discal line, and anteriorly to M resp. M^2 , creamy.—Hindwing: basal costal bar absent, or very short, placed along the basal branch of PC, no costal subbasal bar, subbasal bar C- SC^2 also often absent, subbasal bars SC^2-SM^3 continuous, heavily bordered white basally,

posteriorly approaching, or joining, submedian bar SM^2 — SM^3 , this latter much more basal than the other submedian bars, anteriorly joined to median bar (SM^1)— SM^2 by means of an irregular longitudinal line, the interspace limited by these median and submedian bars as well as the cellule beyond SM^3 and part of the area between median and discal bars (SM^1)— SM^2 even drab; median bars continuous down to (SM^1), the line crossing M at, or a little distal of, base of M^2 , regularly convex; costal median bar variable in position, always more basal than the other median bars, which are almost continuous to (SM^1), this line convex in middle, nearly parallel to submedian line, interspaces between the two lines white proximally, cinnamon buff distally; discal bars all continuous representing a very irregular line, which forms nearly a half-ring between costal margin and internervular fold R^1 — R^2 , then runs obliquely distad to beyond R^2 , turns sharply back, forming a concave curve down to beyond M^2 , where it forms a right angle ending at SM^2 about 5 mm. from anal angle; at R^1 the line comes close to the median one; distally the line is broadly bordered with white, which colour is very much extended between SC^2 and R^1 ; post-discal and submarginal bars not sharply defined, brown, the former distally, the latter proximally bordered with creamy buff, curved towards each other, the upper ones meeting to form rings, the rings filled up with brown and grey scaling, ring C— SC^2 very conspicuous on account of its heavy tawny outer border and its regular shape; irregular ring-spots R^1 — R^3 and the anal ones the smallest, spot R^3 — M^1 , which is the least well-defined, the largest; submarginal area and outer margin cinnamon, varying in shade, admarginal bars thin, transverse, slightly curved, bordered with white proximally and with whitish blue distally; tail R^3 8 to 12 mm., rather broad, not pointed, generally slightly turned backwards, tail M^1 5 to 8 mm. long, straight, slightly pointed, tail M^2 7 to 10 mm. long, somewhat curving frontad, slightly pointed.

♀. Not essentially different from ♂.

Clasper not essentially different from that of *Ch. varanes*; penis-funnel much shorter, and broader apically, than in that species; penis with one solitary tooth about $1\frac{1}{3}$ mm. before apex.

Length of forewing: ♂, 38—47 mm.

“ “ ♀, 46—50 mm.

Hab. Madagascar, in forest country. In the Tring Museum, 7 ♂♂.

B. Forewing below with single rows of scales before C.

26. *Charaxes candiope*.

Nymphalis candiope Godart, *Enc. Méth.* IX. p. 353. n. 10 (1813) (hab.?).

Charaxes viridicostatus Aurivillius, *Ofvers. Vet. Akad. Förh.* XXXVI. 7. p. 41 (1879) (Damaraland).

♂♀. *Body above*: varying from tawny to ochraceous, head, pronotum, and anterior part of mesonotum deeper in tint than rest of upperside, dots on head and pronotum vestigial or absent, palpi with a black dorso-lateral stripe; *underside* creamy buff, sides of breast slightly tawny.

♂. *Wings*: veins (and membrane) green; *upperside* tawny or orange tawny, basal area slightly paler or pale ochre yellow.—Forewing rather falcate; three cell-bars vestigial, bar 3 mostly black at SC; submedian and median bars M^1 — M^2 showing through from below, or the median one clearly marked behind M^1 , median bars SC^4 — M^1 present, bar R^3 — M^1 halfmoon-shaped, occasionally nearly extending to base of M^1 , bar R^2 — R^3 often fused with bar D, which latter is dilated in front,

bars SC^4-R^2 more distal, dilated, each more or less convex proximally, concave distally, often joined to bar D as well as to discal bar R^2-R^3 , in which case the interspaces are more or less isolated and reduced in size ; a complete series of black discal patches, representing the discal bars, the series parallel to outer margin, but turning costad at R^1 , the patches contiguous, each convex proximally, concave distally, patch R^1-R^2 the smallest, all joined along veins (except (SM^1)) to the postdisco-submarginal band, thus isolating a series of seven tawny ochreous, post-discal, interstitial spots, of which the posterior ones are the largest ; edge of wing blackish brown, the admarginal interspaces pale tawny, but not always clearly marked ; the postdisco-submarginal black band widest in front ; the discal and postdiscal interspaces in the St. Thomé race small or only vestigial.—Hindwing : basal to discal bars more or less showing through from underside ; a postdisco-submarginal black band, widest between SC^2 and R^1 (at least 9 mm.), suddenly narrower from R^2 or R^3 to M^2 , often interrupted at vein M^1 , including a series of tawny ochreous, seldom whitish, submarginal interstitial spots, which stand either in the middle of the band or nearer its outer edge ; postdiscal bars M^2-SM^2 thin, curved, followed each by a white line, between which and the respective submarginal bars, which are represented by two spots, there is more or less obvious pale blue scaling ; admarginal interspaces tawny, upper ones more orange tawny, seldom suffused with black, anal one olive buff, no distinct marginal line.

Underside : the naked veins and costal edge of forewing conspicuously green ; bars black.—Forewing : buff or clayish buff, slightly ochreous ; basal half of costal edge before C with rows of white scales, otherwise scaleless ; basal cell-spot present, bars linear, bar 3 the heaviest, about $\frac{2}{3}$ mm. thick, its upper end a little hook-shaped, that of bar 4 more strongly so ; submedian and median bars M^2-SM^2 seldom vestigial at M^2 , bars M^1-M^2 parallel, thin, at right angles to veins, about $2\frac{1}{2}$ mm. distant from each other, submedian one (seldom absent) behind base of M^1 or a little more distal ; median bar R^3-M^1 more distal than the one behind it, bar R^2-R^3 separate from bar D, but the interspace between them brownish, bars SC^3-R^1 forming a continuous or a broken line ; discal bars concave distally, the series continuous, convex from SC^3 to R^3 , then running obliquely to SM^2 which is reached 6 mm. from tip, while at R^3 the series is 10 mm. distant from outer margin, posterior bars heavier than the upper ones, the discal bars form the outer edge of a band of nearly even width, the band varies from walnut brown to russet, changes posteriorly generally into blackish brown, its upper two thirds are occasionally cinnamon or almost obsolete ; a series of brown postdiscal spots, parallel to discal series of lunules, approaching it a little behind, distance between the two series about 4 or 5 mm., spot SC^4-SC^6 developed to a patch, last spot large, fused with the submarginal bar ; series of thin, inconspicuous, submarginal bars parallel to outer margin, submarginal interspaces buffish grey, more bluish grey behind, a bluish grey dash or spot within black patch M^2-SM^2 .—Hindwing : sepia colour or russet sepia, submarginal area drab ; bars thin, basal costal bar pointing distad, no costal subbasal bar, the subbasal series extending from C to SM^3 ; submedian series irregular but continuous from costal margin to M, with creamy white scaling at proximal side, which scaling forms generally a conspicuous spot before and another in cell, submedian bar M^1-M^2 , if present, close to base of M^2 , bar $M^2-(SM^1)$ distal of base of M^2 , about at right angles to veins, while bar $(SM^1)-SM^2$ is oblique and often joins the respective subbasal bar at SM^2 , bar SM^2-SM^3 does not extend to SM^2 , it curves basad anteriorly and joins the respective subbasal one, forming a kind

of half ring, which sometimes is filled up with whitish scaling; median series irregular, oblique down to R^2 , slightly concave, bars R^2-M^1 more distal than the others, R^2-M^1 about $1\frac{1}{2}$ mm. from base of M^1 , bar M^1-M^2 just behind base of M^1 , $M^2-(SM^1)$ about 3 mm. more distal, at right angles to M^2 , $(SM^1)-SM^3$ again more distal, reaching abdominal margin beyond tip of SM^3 , the median bars (except last) with creamy white scaling at outer side, this scaling forming an irregular band from costal margin to R^2 , followed by three spots, bar $M^2-(SM^1)$ edged with creamy white; discal bars arched, especially upper two, the series concave from C to R^3 , bar SC^2-R^1 the most proximal, standing in or before the middle of the wing, oblique from R^3 to M^2 or to abdominal margin, the bars edged distally with ochraceous or greenish ochraceous lunules; postdiscal bars arched like the discal ones, the postdiscal interspaces therefore halfmoon-shaped, the upper ones generally wider than the posterior ones, varying in tint from raw umber to burnt umber, white submarginal spots in the same position as above, posterior ones curved, black submarginal bars represented by black dots to which are joined proximally bluish dots, uppermost black dot generally absent, all placed in buff or olive buff scaling; upper admarginal interspaces pale buff; marginal line posteriorly burnt umber colour; upper tail slender, more or less pointed, second longer, of even width, often slightly spatulate.

♀. Larger than ♂, basal area of both wings, *above*, postdiscal interstitial spots of the forewing and the submarginal ones of the hindwing paler; tails longer than in ♂, broader.

Length of forewing: ♂, 39—46 mm.

” ” ♀, 44—52 mm.

Apical process of clasper broad, narrowed into a sharp, rather short, hook; tenth tergite divided by a rounded sinus; penis with a dorsal series of teeth, varying in size and number, the teeth closer together near apex.

Hab. Africa south of the Sahara (Cape Colony excepted); St. Thomé; Socotra.

a. *Ch. candiope candiope.*

Nymphalis candiope Godart. *Enc. Méth.* IX. p. 353. n. 10 (1823) (hab.?): Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 16 (1850) (Congo); Kirby, *Cat. Diurn. Lep.* p. 268. n. 17 (1871) (Congo).

Charaxes candiope, Butler, *Proc. Zool. Soc. Lond.* p. 628. n. 18 (1865) (Congo); Druce, *ibid.* p. 412. n. 5 (1879) (Angola); Oberth., *Ann. Mus. Civ. Genova* XV. p. 166. n. 45 (1879) (Abyssinia); June, July; Gooch, *Entom.* XIV. p. 6 (1881) (Natal); Spiller, *ibid.* XV. p. 8 (1882) (Natal); Staud., *Erot. Tagf.* p. 169. t. 58. ♂ (1886); Trin. & Bok., *S. Afr. Butt.* I. p. 327. n. 107. t. 6. f. 4. ♂ (1887) (from Natal northwards); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 146. n. 77 (1889) (Si-Baughy, Gabon); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 85 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story of Rear Column* p. 440. n. 87 (1890) (Aruwimi); Trim., *Proc. Zool. Soc. Lond.* p. 180. n. 33 (1892) (Omrora VIII.; Ehanda IX.); Karsch, *Ent. Nachr.* xviii. p. 176. n. 44 (1892) (Baliburg); Schaus & Clements, *Sierra Leone Lep.* p. 8 (1893) (S. Leone); Auriv., *Ent. Tidskr.* XV. p. 310 n. 190 (1894) (Cameroons, IV. v.); Butl., *Proc. Zool. Soc. Lond.* p. 562. n. 17 (1894) (Mt. Hübnel, 16,000 ft.); Holl., *Proc. N. St. Nat. Mus.* XVIII. p. 262 (1895) (Somaliland); Butl., *l.c.* p. 254. n. 13 (1895) (Zomba); id., *l.c.* p. 725. n. 13 (1895) (*Brit. E. A.*); id., *l.c.* p. 852. n. 17 (1896) (Nyassaland); Sharpe, *ibid.* p. 553. n. 33 (1896) (Darro Mts., Somaliland); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 367. n. 44 (1896) (Many local. noted); Auriv., *Kongl. Sr. Akad. Hand.* XXXI. 5. p. 240. n. 51 (1899) (from Sierra Leone and Abyssinia to Damaraland and Natal).

Charaxes viridicostatus Aurivillius, *Öfvers. Vet. Akad. Förh.* XXXVI. 7. p. 41 (1879) (Damaraland).

♂. *Body above*: clayish ochraceous, wings orange tawny, base ochre yellow.—Forewing: bar D and median bars SC^4-M^1 very variable in size, median bars

R¹—M¹ often obsolete, bars SC¹—R² not joined to bar D, bar R³—M¹ generally smaller than the ochreous or tawny orange triangle bordered by it and veins M¹ and R³; black discal patch R¹—R² about the size of the orange tawny patch at its proximal side, or smaller; postdiscal, tawny orange, interstitial spots very variable, sometimes larger than the black discal patches.—Hindwing: submarginal interstitial spots orange tawny, upper four or five situated nearer the outer than the inner edge of the black band; admarginal interspaces orange tawny, anal one olive buff.

Underside.—Forewing: basal area pale buff; cell-bar 4 thin, nearer to apex of cell than to bar 3; median bars SC³—R² oblique to the veins; brown discal band 3 to 4 mm. broad between R³ and M¹, the band often very pale.—Hindwing: discal lunule SC²—R¹ nearer to base than to outer margin or just in middle of wing; distance between median and discal bars R²—R³ varying from 1½ to 4 mm. at R², postdiscal interspaces C—M¹ of nearly equal width or the upper three much wider, the distance from the proximal edge of discal bar SC²—R¹ to the outer edge of the respective postdiscal bars varying from 2½ to 4½ mm.; marginal line pale, ill-defined; upper tail 3½ to 6½ mm., second 7 to 9½ mm. long.

♀. Paler than ♂, especially basal area, median bars of forewing *above* larger, bar R¹—R² often joined to bar D as well as to discal patch R¹—R²; upper tail 8 to 10½ mm. long, second 9 to 10½ mm.

The bars of the *underside* are often partly indistinct, the wings not appearing so strongly variegated as in other individuals, the white band on the disc of the hindwing being also absent. Such specimens occur especially often in S. E. Africa, and are most likely individuals which have hibernated in the pupal state, representing a cold season form.

Length of forewing: ♂, 40—46 mm.

” ” ♀, 46—52 mm.

Hab. Continent of Africa from Sierra Leone and Abyssinia to Natal and Damaraland; not found in the Cape Colony; a common species. Antinori observed it feeding on the exudations of Solanaceous plants (Oberthür, *Ann. Mus. Civ. Genova* XV. p. 166). According to Mr. Morant the species is on the wing during the greater part of the year in Natal (Trimen & Bowker, *l.c.*).

b. *Ch. candiope thomasius* (Nov. Zool. V. t. 7. f. 5. ♂).

Charaxes candiope var. *thomasius* Staudinger, *Exot. Tagf.* p. 169 (1886) (St. Thomé); Auriv., *Kong. Vet. Akad. Handl.* XXXI. 5. p. 241. sub n. 51 (1899) (St. Thomé).

Charaxes candiope local race? : *C. thomasius*, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 368. sub n. 45 (1896) (St. Thomé).

♂. *Wings above*, basal area ochre yellow, the area on forewing sharply defined, on hindwing shading into russet tawny.—Forewing: bar D heavy, fused with median bar R²—R³, median bar R²—M¹ visible, bar M¹—M² short, vestigial, outer area of wing blackish mummy brown, the tawny postdiscal interstitial spots small, posterior ones obsolete, as are the admarginal spots.—Hindwing: disco-marginal blackish mummy brown area very broad in front, the submarginal dots within it minute, admarginal tawny interspaces obsolete, except two upper ones.

Underside.—Forewing: basal area very pale ochreous; submedian bar M¹—M² absent (always?); cell-bars as in continental *candiope*, apical interspace

of cell narrower than the postmedian one; median bars SC^3-R^2 closer to cell than to discal bars; brown discal band 4 to 5 mm. wide between R^2 and M^1 ; series of brown postdiscal spots SC^5-M^1 parallel to outer margin.—Hindwing as in *candiope candiope*, brown marginal line better defined, black submarginal spots partly dash-like, longitudinal.

♀. Unknown.

Length of forewing: ♂, 42 mm.

Hab. Island of St. Thomé (St. Thomas) in the Gulf of Guinea (coll. Staudinger).

c. Ch. candiope velox (Nov. Zool. VII. t. 11. f. 3. ♂).

Charaxes velox Grant, *Bull. Liverpool Mus.* II. p. 10 (1900) (Socotra, up to 4000 ft.).

♂♀. *Wings above* and body tawny, basal area of wings a little paler.—Forewing: median bar R^3-M^1 halfmoon-shaped, touching both veins, bars SC^1-R^2 twice as long as broad.—Hindwing: submarginal interstitial spots in middle of black disco-submarginal band, outer edge of this band somewhat dentate between the veins; admarginal interspaces R^2-M^2 partly, anal one totally, scaled olive-buff.

Underside.—Forewing: postmedian interspace of cell paler than the rest of the cell, whitish, a little, or not, broader than the apical interspace of cell; submedian bar M^1-M^2 proximal of base of M^1 ; median bars SC^3-R^2 forming a curved line, bar SC^5-R^1 at right angles to veins; black patch M^2-SM^2 in posterior angle about half the size of the respective postdiscal interspace.—Hindwing: discal and submarginal interspaces grey or drab; discal and postdiscal, luniform, bars parallel, the series of nearly equal distance from C to M^1 , the interspaces between them greenish ochraceous, discal bar SC^2-R^1 in the middle of the wing, 6 mm. distant from base of R^1 , measured between veins, discal bar R^2-R^3 2 mm. distant from median bar R^2-R^3 , measured along R^2 , the halfmoon formed by the discal and postdiscal bars M^2-SM^2 less oblique than in continental *candiope*; edge of wings dentate, upper tail pointed and long in ♂, 6 to 7 mm. long, second 7 to $8\frac{1}{2}$ mm.; in ♀ tails 10 mm.

Length of forewing: ♂, 39—41 mm.

” ” ♀, 44 mm.

Hab. Socotra; 4 ♂♂, 2 ♀♀, collected by O. Grant in January and February 1899, at 1200 and 3500 ft.

27. Charaxes antamboulou (Nov. Zool. VII. t. 11. f. 2. ♂).

Charaxes antamboulou Lucas, *Ann. Sc. Nat. Zool.* (5). XV. 22. p. 1 (1872) (Madagascar); Saalm., *Lep. Mad.* I. p. 86. n. 125. t. 2. f. 24. 25 (1884) (Nossibé); Mab., in Grandid., *Hist. Mad., Lép.* I. p. 191. t. 23. f. 3. 4. ♀ (1885-87) (pt.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 368. n. 45 (1896) (Ft. Dauphin; Ankafana); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 241. n. 52 (1899) (Madagascar).

Charaxes candiope, Ward (*non* Godart, 1823), *Ent. Mo. Mag.* IX. p. 210 (1873) (Madagascar); Saalm., *Ber. Senk. Ges.* p. 82. n. 29 (1878) (L'oucoubé).

Charaxes candiope var., Saalmüller, *l.c.* p. 123 (1879).

♂♀. Body *above* tawny ochraceous, thorax paler, palpi with a black dorso-lateral line; *underside* cream colour, sides of sterna russet, femora black, with white, dispersed scales, abdomen clay colour.

♂. *Wings above*, similar to those of *Ch. candiope*; basal area pale ochreous veins partly green; hindwing tawny posteriorly and along black postdisco-

submarginal band.—Forewing : falcate, outer edge not, or very little, dentate at the veins, middle cell-bar represented at SC by a black or brown spot ; bar D sometimes separate, mostly with a small ochreous dot distally at upper end, seldom completely fused with median bars ; median bar M^1-M^2 seldom obviously vestigial, the other median bars of *Ch. candiope* merged together with the black discomarginal area, this area including a series of postdiscal interstitial spots as in *Ch. candiope*, the spots, however, smaller, and some discal spots, namely, a band composed of three confluent spots between SC^1 and R^2 , and two contiguous spots R^2-M^1 , admarginal interspaces and outer half of costal margin tawny.—Hindwing : moderately dentate, two tails ; interstitial spots within black postdiscosubmarginal band smaller than in *Ch. candiope*, tawny colour along this band very much restricted from C to R^2 .

Underside as in *Ch. candiope*, brighter russet, the white borders of the bars rather more conspicuous.—Forewing : cell-bar 3 closer to bar 2 than to 4, interspace between 2 and 3 bright russet, basal cell-bar rather long, conspicuous, upper end of cell-bar 4 at right angles to SC, or pointing proximad ; median bars SC^3-R^2 at right angles to veins ; interspaces between median bars SC^3-M^1 and cell russet, median bar M^1-M^2 touching at ends the discal, russet, band-like, area ; submedian bar M^1-M^2 proximal of base of M^1 ; submedian and median bars $M^2-(SM^1)$ seldom vestigial behind M^2 , the former 1 or 2 mm. distant from base of M^2 , discal series of curved bars less concave in middle than in *candiope*.—Hindwing : median bar R^2-R^3 more gently curved than in *candiope* ; discal uniform bar SC^2-R^1 in middle of wing ; upper, tawny russet, postdiscal halfmoon-shaped patches wider than the middle ones, last halfmoon less obliquely placed to vein M^2 than in *Ch. candiope candiope* ; submedian bar $M^2-(SM^1)$ a little more proximal than in *candiope* ; upper tail 6 to 8 mm., second 9 to 10 mm. long.

♀ like ♂ ; *underside* more greyish, especially in submarginal region, discal interspaces of hindwing more white ; upper tail 9 mm., second 10 mm.

There occur specimens of either sex which have the forewing more falcate and the underside much less variegated, the bars being partly obsolete. Such a specimen is figured by Mabille, *l.c.*, t. 23. f. 4 ; in the Tring Museum there is a ♂ and a ♀ of this form, which specimens have bar D and bars SC^1-R^3 of forewing, most of the bars of the hindwing as well as the white discal spots and the upper postdiscal, half-moon-shaped, patches obsolete. It is possible that these specimens represent the cold season form.

Length of forewing : ♂, 38—41 mm.

” ” ♂, 41—47 mm.

Hab. Madagascar : Nossi-bé, Ft. Danphin, Ankafana, Morondawa. In the Tring Museum 9 ♂♂, 4 ♀♀, mostly from Morondawa.

Ch. antamboulou is very closely allied to *Ch. candiope*. We keep it separate as a distinct species, because there is another *Charaxes* in Madagascar, named *cowani*, which is also a close ally of *candiope*, and differs from *antamboulou* only in some details. We know little about the distribution and nothing about the time of occurrence of *Ch. antamboulou* and *cowani* ; these forms may be mere individual varieties ; but before we have sufficient evidence to warrant such a conclusion, it is better to treat the two forms as distinct species. In Saalmüller's figure the hindwing is nearly as strongly denticulate as it is in *cowani* ; if that is not due to exaggeration on the part of the artist, the example figured would prove that the strong denticulation of the wings of *cowani* is not of specific value.

28. *Charaxes cowani* (Nov. Zool. VII. t. 11. f. 4. ♂).

Charaxes cowani Butler, *Ann. Mag. N. H.* (5). II. p. 285 (1878) (Fianarantsoa); id., *l.c.* (5). V. p. 336 (1880) (♀, Fianarantsoa); Saalm., *Lep. Mad.* I. p. 88. n. 126 (1884) (Fianarantsoa); Butl., *Proc. Zool. Soc. Lond.* p. 72. sub n. 89 (1888) (*covani* and *antamboulou* distinct); id., *Journ. Linn. Soc. Lond.* XXV. p. 368. n. 46 (1896) (Fianarantsoa; Betsileo); Auriv., *Kongl. Sr. Akad. Handl.* XXXI. 5. p. 241. n. 53 (1899) (Madagascar).

Charaxes antamboulou Mabille, in Grandid., *Hist. Mad.* XIX. 2., *Lép.* I. p. 191. t. 23. f. 1. 1a (1885-87) (pt.; *covani* = *antamboulou*!).

Charaxes covani Staudinger, *Exot. Taf.* p. 169 (1886) (Madagascar).

♂. Body *above*, and basal area of wings, tawny ochraceous, darker than in *antamboulou*.—Forewing: discal interspaces SC^4 — R^3 reduced in size, partly obsolete, tawny like the postdiscal interstitial spots, no interstitial spot between R^2 and M^1 , or only a trace of it, black area posteriorly wider; edge of wing dentate.—Hindwing: black area also broader than in *antamboulou*, edge of wing strongly dentate, tooth M^2 developed to a tail; blue submarginal dots R^1 — SM^2 generally rather conspicuous.

Underside: darker than in *antamboulou*, the buffish interspaces, especially of forewing, reduced in size.—Forewing: cell-bar 3 a little more distal than in *antamboulou*, apical interspace of cell russet, not buff, submedian and median bars M^1 — M^2 much closer together than in the allied species, black discal patch M^2 — SM^2 more oblique, postdiscal bars represented by small, but rather sharply marked, dots; submedian and median bars M^2 —(SM^1) represented by spots behind M^2 .—Hindwing: blue and black submarginal dots conspicuous, but small: subbasal and submedian bars (SM^1)— SM^3 absent; postdiscal series of half-moon-shaped spots a little less curved than in *antamboulou*, tooth R^2 2 mm. long, tail R^3 10 mm., tail M^1 3 to 4 mm., tail M^2 10 to 11 mm.

♀. Body and basal area of wings *above* as in *antamboulou*, outer margin of both wing and posterior portion of disc of hindwing very dark tawny brown.—Forewing: median bar R^3 — M^1 without tawny spot at outside, completely fused together with the black outer area; tawny interspaces at distal side of median bars R^3 — M^1 vestigial.—Hindwing: submarginal, buff, spots rather heavy.

Underside somewhat paler than in ♂, submedian and median bars M^1 — M^2 of forewing not quite so close together, dentition of wings as in ♂, tail R^3 11 mm., tail M^1 4 mm., tail M^2 12 mm. long.

Hab. Madagascar: Betsileo; Fianarantsoa. In the Tring Museum 2 ♂♂, 1 ♀ without precise locality.

II. Underside, series of subbasal bars of hindwing stopping at M, or abdominal fold streaked.

C. Serrations of costal margin of forewing in basal third about half the number of the scale-rows before vein C.

c. Discal bars of fore- and hindwing regularly arched, postdiscal ones of hindwing also concave distally, about parallel to discal ones.

c¹. Median bars SC^3 — R^2 of forewing below close to cell, if present.

c². Median bars of hindwing below continuous, forming an almost straight line, which is conspicuously bordered with white distally.

29. *Charaxes numenes* (Nov. Zool. VII. t. 7. f. 3, ♂).

Nymphalis numenes Hewitson, *Erot. Butt.* II. *Nymphalis* t. 2. f. 9. 10. 11. ♂, ♀ (1859) (S. Leone); Kirby, *Cat. Diurn. Lep.* p. 269. n. 27 (1871) (S. Leone); Mabille, *Bull. Soc. Zool. France* I. p. 280 (1876) (Landana); Dewitz, *Nov. Act. Kais. Leop. Car. Ak. Naturf.* XLI. II. 2. p. 8 (1879). *Charaxes numenes*, Butler, *Proc. Zool. Soc. Lond.* p. 630. n. 29 (1865) (S. Leone); Plötz, *Stett. Ent. Zeit.* XLI. p. 194. n. 104 (1880) (Eninga, May; Victoria, Nov.); Staud., *Erot. Tagf.* p. 170 (1886) (Monrovia; Fernando Po; Gaboon); Dewitz, *l.c.* L. 4. p. 371 (1887); Godm. & Salv., in Jameson, *Story Rear Column* p. 440. n. 83 (1890) (Aruwimi); Möschl., *Abh. Senkenb. Gesellsch.* XV. 1. p. 61. n. 100 (1890) (Aburi); Auriv., *Ent. Tidskr.* XV. p. 311. n. 192 (1894) (Ekundu, Bonde, XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 377. n. 76 (1896) (S. Leone, Accra; O. Calabar; Cameroons; Fernando Po; Angola); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 240. n. 45 (1899) (Sierra Leone to Angola).

♂ ♀. Body (♂) above black, somewhat bluish, dark mummy brown in front, dots on head and pronotum white, (♀) wood brown or cinnamon; *underside*, palpi buff, mostly with the vestige of a white lateral line, abdomen of ♂ buff, of ♀ clayish buff, breast cinnamon olive.

♂. *Wings above*: blue-black, glossy in basal two-thirds.—Forewing: four pale blue, discal spots, in an oblique row from R^1 — M^2 , often preceded by a fifth spot, upper spots generally linear, the others more or less rounded, diameter 1 to $1\frac{1}{2}$ mm., the series almost straight, spot R^3 — M^1 being less distal than in *tiridates*; a series of small postdiscal spots from SC^1 to internal margin, last one or two sometimes absent, first spot the largest, about 1 mm. broad, white, spot SC^5 — R^1 also generally white, the others pale blue, middle ones sometimes luniform, the series parallel to outer margin, but curving costad in front, spot R^1 — R^2 5 mm. from outer margin; marginal spots pale buff, clearly marked, spots R^3 — M^2 more or less luniform.—Hindwing: a postdiscal series of pale blue spots of nearly equal size, spot C— SC^2 rounded, the largest, diameter about $1\frac{1}{2}$ mm., spots R^3 — M^2 halfmoon-shaped, spot R^2 — R^3 the smallest, the series first concave, spot SC^2 — R^1 being 9 to 12 mm. distant from outer margin, then almost straight, spot M^2 —(SM^1) 5 mm. from outer margin; a complete series of white submarginal dots, edged blue, especially distally; admarginal interstices with triangular, buff, spots near veins, no such spots at C and SC^2 ; fringe white except at the very ends of veins, edge of wing buffish between veins, rather heavily so between C and R^1 ; abdominal fold brownish black, paler at edge.

Underside: cell of forewing and submedian interspaces of both wings pale yellowish buff, discal interspaces of forewing at median bars and discal interspaces of hindwing also buffish, median interspaces on both wings and rest of the large triangular discal area of forewing raw umber or bistre colour; white borders of bars conspicuous.—Forewing: basal cell-bar absent, bar 2 heavy, generally over 1 mm. broad, bar 3 separated into two spots, the posterior the largest, the spots sometimes fused to a bar which is constricted before middle, bar 4 thinner, upper half deeply concave, upper end pointing distad, lower half nearly straight, reaching M at or a little below base of M^1 ; bar D very gently curved, sometimes nearly straight; submedian bars M^1 —(SM^1) very heavy, bar M^1 — M^2 a little more distal than bar M^2 —(SM^1) and also distal of point of origin of M^1 , submedian bar R^3 sometimes marked, situated in angle before M^1 ; median bars SC^3 — SM^2 in an oblique series, the series broken at R^3 , bar R^3 — M^1 , which is convex distally, being about 2 mm. distant from lower end of bar R^2 — R^3 , often also broken at M^1 , bars M^1 — SM^2 much heavier than the upper ones, last one often touching discal bar, median interspaces M^1 — SM^2 sometimes with black scaling, which often joins the bars together; discal bars R^3 — SM^2 evenly curved, black, the other discal bars

more or less obsolete, bars M^1 — SM^2 bordered pale blue outwardly; posterior postdiscal interspaces pale yellow, the others more buffish, upper two with a white spot each; postdiscal bars M^1 — SM^2 represented by heavy black patches which have pale blue, not conspicuous, outer borders, the outer postdiscal spots vestigial, limited distally by pale half-rings; marginal, yellowish buff or pale clayish, spots ill-defined.—Hindwing: basal costal bar close to PC, touching this vein at bent; costal subbasal bar seldom marked, subbasal bar C— SC^2 often feeble, barely $\frac{1}{2}$ mm. distal of point of origin of PC; submedian bars continuous (or nearly so) from costal margin to (SM^1), costal bar often curving distad, joining costal bar of median series; the latter also continuous, somewhat in middle, both series about parallel, distance variable individually, white borders of the lines prominent, while the black bars are often obsolete and always thin, except upper bars; discal bars all arched, the series deeply concave between C and R^2 , the bars often obsolete, white borders seldom prominent, postdiscal bars halfmoon-shaped, black, middle ones sometimes nearly straight, generally much heavier than the discal ones, but often rather ill-defined; postdiscal interspaces more yellow than discal and submarginal areas; interspace C— SC^2 as large as, and generally better defined than, interspace SC^2 — R^1 ; a series of white submarginal dots, followed by blue and by black ones, except between upper veins; admarginal interspaces with triangular spots as above, rather paler, shaded with blue upon internervular fold; tails very short, upper one $1\frac{1}{2}$ to 2 mm. long, second a mere tooth.

♀. Resembling ♀ of *tiridates* on *upperside*.—Forewing: shorter, white patch between M^1 and M^2 less oblique.—Hindwing: submarginal spots smaller, white, with blue borders; admarginal interstitial spots interrupted.

Underside as in ♂, hence very different from *tiridates*; white band of forewing as above, patches M^2 — SM^2 distally limited by the black postdiscal patches, which are smaller than in ♂, no discal bar M^2 — SM^2 , but the yellow interstitial halfmoon vestigial, postdiscal interspaces much less yellow than in *tiridates*.

Length of forewing: ♂, 41—44 mm.

“ “ ♀, 45—51 mm.

Penis with a tooth 1 mm. before tip as in *violetta*, but the large proximal crest reduced to a very low but long ridge, the penis resembling that of *Ch. mixtus*; penis-funnel as in *violetta*.

Hab. West Africa from Sierra Leone to Angola and to the Uganda Protectorate. In the Tring Museum 23 ♂♂, 10 ♀♀ from: Sierra Leone, Pt. Lokkoh, July 1899 (Capt. Stevens); Gold Coast; Congo; Great Forest of Upper Congo, three days' march from Ft. Beni, 7. v. 1899 (Dr. Ansorge); Pt. Alice, Uganda, 19. vii. 1894 (Dr. Ansorge); Ran, Nandi country, Uganda Protectorate, 14. iii. 1898 (Dr. Ansorge).

30. *Charaxes violetta* (Nov. Zool. VII. t. 7. f. 1. 2, ♂, 8, ♀).

Charaxes violetta Smith, *Ent. Mo. Mag.* XXI. p. 247 (1885) (Del. Bay); Smith & Kirby, *Rhop. Exot.* I. *Charax.* p. 1. t. 1. f. 1. 2. 3. ♂, ♀ (1887) (Del. Bay); Trim. & Bowk., *S. Afr. Butt.* III. p. 385. n. 383 (1889) (Del. Bay.); Monteiro, *Delagoa Bay* t. 1. f. 3. (1891); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 376. n. 74 (1896) (Del. Bay; Zanzibar); id., *Proc. Zool. Soc. Lond.* p. 851. (1896) (Nyassaland); id., *l.c.* p. 852. n. 14 (1896) (Nyassaland, ♀); Auriv., *Kongl. Sc. Akad. Handl.* XXXI. 5. p. 239. n. 40 (1899) (Del. Bay; Germ. E. Afr.; Bagamoyo, Pangani). *Charaxes ripharens*, Holland, *Proc. U. S. Nat. Mus.* XVIII. p. 754 (1896) (Brit. E. Afr.).

♂♀. Body of ♂ as in the allied species; ♀, *above* olive bistre, abdomen hair brown, white dots on head and collar conspicuous, *underside* wood brown, palpi creamy buff.

♂. *Wings above* : blue-black, glossy, with pale blue and white markings which assume a purplish tint in side-light ; resembling the upperside of *Ch. cithaeron*.—*Forewing* : an oblique discal series of five spots from SC^{45} — M^2 , upper two linear, first often absent, last two elongate or subrotundate, never halfmoon-shaped, 3 to 4 mm. long, spot R^3 — M^1 very little more distal than spot R^2 — R^3 ; a postdiscal series of small, rounded or triangular, dots from SC^4 to M^2 , upper two white, the following two minute, often absent, the series placed as in the allied species : between M^2 and SM^2 there is a large patch composed of the discal and postdiscal spots which are merged together, this patch, which measures 5 to 8 mm. in length, often divided by a deep sinus ; a broad streak behind the patch along internal margin, 8 to 11 mm. long ; minute, whitish or bluish, marginal dots, upper ones, sometimes all, obsolete.—*Hindwing* : a large violet blue area, from C to SM^2 , much shaded with white between abdominal fold and apex of cell, entering cell, often extending basad to middle of cell, partition SC^2 — R^1 4 to 11 mm. long, often isolated, sometimes separated into two spots, partition C — SC^2 always isolated, mostly divided into two spots, which are sometimes very small, outer edge of area convex as a whole, concave between veins R^3 and SM^2 ; black outer area narrowing posteriorly, constricted at veins, with a series of minute blue dots with white centres ; admarginal interstitial spots concave both sides, blue, white at veins, no such spots between C and SC^2 , of spot SC^2 — R^1 only the posterior half marked, occasionally this as well as upper half of spot R^1 — R^2 absent.

Underside as in *numenes* ; bars of forewing much less heavy, median bars straight, the series less broken at R^3 and much less oblique, being 6 to 8 mm. distant at M^2 from discal bar ; on hindwing the submedian and median lines of bars farther apart, especially at costal margin and at M^2 , the median line less convex in middle, often almost quite straight, discal interspaces rather more shaded with white near median bars than in *numenes* ; submarginal tricolorous spots small, the white proximal and black distal portions closer together ; tails pointed, longer than in *numenes*, upper one 4 to 6 mm. long, second 2 to 3 mm.

♀. *Wings above* : resembling those of *Ch. cithaeron* ; brownish black, slightly purplish, olivaceous at base.—*Forewing* : a broad white band from costal to internal margin, curved, widest behind, about 1 mm. from cross-veins, 10 to 13 mm. broad between M^1 and M^2 , with more or less extended pearl-blue scaling at proximal side of band from M^1 or M^2 to internal margin, white costal streak prolonged basad ; two white postdiscal spots SC^4 — R^1 , first oblique, seldom rounded, mostly larger than the second, dots R^1 — M^1 often marked ; marginal dots generally absent or vestigial, seldom distinct, though small.—*Hindwing* : a white discal band, tapering behind, about 4 mm. broad in middle, its proximal edge nearly straight, shaded with pearl blue, this bluish white scaling extending over the black basal area to near middle of cell, the band is also distally bordered by purplish pearl-blue scaling, which is variable in extent and generally dentate between veins ; a white postdiscal patch C — SC^2 mostly fused with white band ; submarginal white dots small, shaded with pale blue at edges ; admarginal interstitial spots thinner than in ♂, pale blue, whitish at veins, seldom interrupted, but spot C — SC^2 absent, upper part of spot SC^2 — R^1 also mostly absent, seldom more spots wanting ; fringe white, except at ends of veins.

Underside : bars and ground colour as in ♂.—*Forewing* : median bars R^3 — SM^2 of forewing a little more oblique, white discal band broader than in *cithaeron*, its inner edge more concave ; black discal lunule M^2 — SM^2 vestigial,

sometimes represented only by a few black scales upon (SM¹); postdiscal dots R¹—M² often well marked and white.—Hindwing: discal interspaces occupied by a white band from costal to abdominal margin, broadest in front or in middle, narrowest at (SM¹), distally shaded with clayish olive and not sharply defined; discal and postdiscal luniform bars variable as in ♂, seldom nearly all absent, the white distal borders of the discal bars often prominent; upper tail nearly even in width, 5 to 8 mm. long, second 4 to 5 mm.

Length of forewing: ♂, 35—42 mm.

” ” ♀, 38—48 mm.

Penis-funnel concave above to the tip, blunt, the tip thickened forming a short hook; penis with one dorsal tooth about 1 mm. before end, and a high triangular ridge about 2 $\frac{2}{3}$ mm. from end (Pl. VIII. f. 10.).

Hab. Delagoa Bay to Mombasa and Nyassaland. In the Tring Museum 22 ♂♂, 12 ♀♀ from: Delagoa Bay, Dar-es-Salaam, Taveta (June and July), Mombasa.

The species is not rare in the coast districts from Delagoa Bay to Mombasa. In the specimens from tropical (German and British) East Africa the blue respectively white discal markings or bands are wider than in the individuals from Delagoa Bay. In the ♂♂ the blue streak at the internal margin of the forewing *above* is in specimens from Delagoa Bay 8 to 11 mm. long, in the individuals from tropical East Africa 11 to 14 mm.; patch SC²—R¹ of hindwing is 4 or 5 mm. long in the individuals from the one, 5 to 11 mm. in those from the other region, the whitish blue scaling in the apical portion of the cell is more restricted in the Delagoa Bay examples, and the outer edge of the blue area is, on the whole, less concave between the veins. In the ♀♀ from Delagoa Bay the band of the forewing is only 4 mm. wide at (SM¹), against 6 to 10 mm. in individuals from German and British East Africa; the band of the hindwing is also obviously narrower both above and below.

The *Charaxes* recorded by Dr. Holland from Brit. E. Africa, as *Ch. xiphares*, *l.c.*, belongs to *Ch. violetta* according to a sketch which Dr. Holland kindly sent us.

d². Median bars of hindwing below not continuous.

e³. Basal area of forewing pale blue.

31. *Charaxes bohemani*.

Charaxes bohemani Felder, *Wien. Ent. Mon.* III. p. 321. n. 22. t. 6. f. 3. ♂ (1859) (L. Ngami); Butl., *Proc. Zool. Soc. Lond.* p. 630. n. 31 (1865) (S. Afr. ?); id., *Lep. Erot.* p. 28. t. 10. f. 3. ♀ (1870) (Zambesi); Druce, *Proc. Zool. Soc. Lond.* p. 412. n. 8 (1875) (Angola); Stand., *Erot. Taf.* p. 170 (1886) (Vivi, Congo); Butl., *Ann. Mag. N. H.* (6). VII. p. 42. n. 10 (1891) (Kandera, Oct.); Trim., *Proc. Zool. Soc. Lond.* p. 81. n. 38 (1891) (Omorora, Aug.); Butl., *Proc. Zool. Soc. Lond.* p. 649. n. 21 (1893) (Brit. C. Afr., Aug.); Selous, *ibid.* p. 16 (1894) (Manica); Trim., *ibid.*, p. 44. n. 70 (1894) (Manica); Reb. & Rog., in Baumann, *Massailand* p. 332. n. 102 (1894) (Uha); Butl., *l.c.* p. 256. n. 20 (1895) (Zomba); id., *l.c.* p. 720 n. 15 (1895) (Zomba); id., *l.c.* p. 852. n. 16 (1896) (Nyassaland); id., *Ann. Mag. N. H.* (6). XVII. p. 69. n. 6 (1896) (Nyassaland); id., *Journ. Linn. Soc. Lond.* XXV. p. 378. n. 79 (1896) (Angola; Congo; Ngama's; L. Mweru; Zomba; Kandera; Mamboia; S. Salvado; Zambesi); Lanz, *Iris* IX. p. 143 (1896) (Tanganika); Auriv., *Konigl. Sc. Akad. Handl.* XXXI. 5. p. 238. n. 36 (1899) (E. Afr.; W. Afr. south of Congo; not in Cape Colony and Natal).
Nymphalis bohemani, Kirby, *Cat. Diurn. Lep.* p. 270. n. 32 (1871) (S. Afr.).

♂♀. Body *above* grey olive, four dots on head, a line behind eye and *underside* of palpi creamy buff; sides of breast and legs olivaceous, seldom creamy, *underside* of abdomen creamy (♂), or olive grey (♀).

♂. *Wings above* black, slightly bluish, nearly the basal half of forewing and basal two-thirds of hindwing pale blue, purplish in side-light.—Forewing ; outer edge of blue area oblique, the area extending to near apex of cell or a little beyond ; black outer area 4 to 8 mm. wide at SM^2 , a white spot SC^4 — SC^5 6 to 9 mm. from apex of wing, oblique, 3 to 5 mm. wide anteriorly, often shaded with blue at edges, a smaller white and blue spot behind it, followed by one or more tiny blue dots ; faint pale blue marginal dots ; fringe white, except at ends of veins.—Hindwing : blue area limited in front by SC^2 , except in basal third of wing where it extends to C , one or two blue patches before SC^2 , posteriorly the area stops at (SM^1), outer border convex ; black outer area 7 to 13 mm. wide at SC^2 , narrowing behind, 4 to 6 mm. broad at M^1 ; a series of pale blue submarginal dots, upper one often obsolete ; admarginal pale blue spots transverse, mostly incised between veins, creamy at veins, upper ones obsolete ; abdominal fold olive grey, the scales within the fold bluish ; fringe white, black at tips of veins.

Underside varying from pale fawn colour to purplish seal brown, outer marginal region paler than rest of wings.—Forewing : white or bluish white borders of bars prominent ; cell-bars almost straight ; bar D faint ; two submedian bars M^1 —(SM^2) slightly varying in position, bar M^1 — M^2 proximal of base of M^1 ; median bars R^3 — SM^2 in an oblique row, corresponding to the outer edge of the blue area of the upperside, almost continuous, each bar more or less concave, bar (SM^1)— SM^2 often vestigial, sometimes reaching discal bar M^2 — SM^2 , median bar R^2 — R^3 close to apex of cell, bar R^1 — R^2 in front of it, but seldom clearly marked ; ground colour outside the median bars rather paler than rest of disc, the pale band-like area corresponding to the white band of the ♀ ; black discal bars M^2 — SM^2 fused to one thin lunule, the other discal bars also luniform, but small, gradually disappearing towards costal margin, each followed by a yellow lunule of larger size, the upper two, however, white as above, shaded with ochraceous at edges, the uppermost one not quite so large as on upperside, the yellow spots R^1 — M^1 small, the series about parallel to outer margin of wing, except uppermost spot, which is more proximal than the others, distance of series from margin about 7 to 9 mm. ; of the postdiscal bars at the outside of the yellow spots only the last three are well marked, being represented by black triangular patches outwardly bordered with pale blue, this blue border resembles the number 3 between M^2 and SM^2 .—Hindwing : bars very much thinner than on forewing, the thin white borders, especially of the median and discal series, more prominent than the black bars, these being partly obsolete ; basal costal bar curved, pointing with upper end towards the bent of PC, seldom absent (in one of Felder's two specimens) ; subbasal bars C—M nearly continuous ; costal submedian bar variable in position, often in front of subbasal bar C— SC^2 , submedian bars C—M about 2 mm. from subbasal ones, entering cell at or beyond base of R^1 ; bar D very thin, without white edge ; series of median bars very irregular, bars SC^2 — R^1 and R^2 — R^3 much more basal than the others, bars M^2 — SM^3 feeble, at M^2 about 4 mm. from discal bar ; all the discal bars luniform, their white borders alone present in some specimens, except bar M^1 — SM^2 , which is always well marked, the series regular, bar C— SC^2 only more basal than the others, the white borders contiguous with wax yellow, more or less distinct, spots which are distally bordered by vestiges of the postdiscal bars, postdiscal bar M^2 — SM^2 prominent, parallel to discal one ; a series of small submarginal white-blue-black dots, sometimes nearly all obsolete ; admarginal lunules wax yellow, buffish at veins, upper ones

obsolete, anal one olive buff; tails slender, acute, upper one 4 to 6 mm. long, second $2\frac{1}{2}$ to 4 mm.

♀. *Wings above*.—Forewing with a white band bordering the blue basal area, the band about 7 mm. broad at SC^{4,5}, slightly increasing in width posteriorly, as far as M², then much narrower, partition M²—SM² trapezoidal, narrowest before SM², upper angle of cell and cross-veins black, sometimes also a black patch at proximal side of band before M¹ and another behind M¹, outer edge of band concave between M² and SM², and here edged with blue; white subapical (postdiscal) patches as in ♂.—Hindwing: as in ♂, but admarginal lunules larger.

Underside.—Forewing: white band as above, bordered proximally by the obliquely placed, heavy, median bars, the band contiguous posteriorly with the discal bar M²—SM²; yellow postdiscal spots heavier than in ♂; interspace between submedian and median bars M¹—M² often all black.—Hindwing: postdiscal and admarginal yellow markings larger than in ♂; discal interspaces sometimes with a vestige of a buffish band at the outer side of the median bars; upper tail of nearly even width, not acute, 8 mm. long, second pointed, 4 mm. long.

Length of forewing: ♂, 36 to 44 mm.

” ” ♀, 45 to 47 mm.

Penis-funnel broad, blunt; penis resembling that of *Ch. bipunctatus*, the ridge-like dorsal tooth less compressed proximally.

Hab. From Lake Ngami northwards to the Lower Congo and the Massailand, not in Cape Colony and Natal. In the Tring Museum 11 ♂♂, 7 ♀♀, from: Lake Ngami (Wahlberg, *type*); Blantyre; Likoma, l. viii. 96 and 23. ix. 96 (Dutton); Zomba, x. to vii. 95 (Dr. Percy Rendall); Mineni Valley, Manica, 17. iii. 92 (Selous); Kahiriri R., Angola, xi. 99 (Penrice); Mkengi, Lower Congo; Karimia, Congo Free State, near border of Toru, l. v. 99 (Dr. Ansoerge).

The individuals (♂♂) from Ngami, collected by Wahlberg, from which Felder described the species, are much smaller than individuals from other localities, and have the underside of the body uniformly cream colour and the undersurface of the wings pale fawn; there are two specimens in the Felder collection marked *type*; others also so marked are in the Stockholm Museum.

Mr. Crawshay, *Ann. Mag. N. H.* (6) XVIII. p. 69, says: “Very rarely met with, and almost impossible to take unless when indulging its foul appetite for putrid flesh or excrement. This specimen I took feeding on leopard’s excrement at the side of the path in open forest.”

f³. Basal area of forewing not pale blue.

c¹. ♂, hindwing with broad pale blue, or pale blue and white, band; basal half of underside of forewing not bluish grey; ♀, hindwing with a broad bluish white or buffish band.

32. *Charaxes xiphares*.

♀. *Papilio Eques Achirus xiphares* Cramer, *Pap. Exot.* IV. p. 171. t. 377. f. a. b (1781) (Cap. b. sp.); Fabr., *Mant. Ins.* 11. p. 11. n. 98 (1787).

♂. *Papilio Eques Argonauticus thyestes* Stoll, in Cram., *Pap. Exot. Suppl.* p. 144. t. 32. f. 2. 2b (1790).

♀. *Papilio Eques Achirus xyphares* (!), Jablonsky & Herbst, *Natura. Schmett.* IV. p. 47. n. 146. t. 60. f. 5. 6 (1790).

♀. *Papilio Nymphalis xiphares*, Fabricius, *Ent. Syst.* III. 1. p. 71. n. 221 (1793).

Eriboea thyestessa (!) Hübner, *Verz. bek. Schmett.* p. 47. n. 432 (1816-27).

Eriboea xypharis (!) Hübner, *l.c.* n. 434.

- ♂. *Nymphalis thurius* Godart, *Enc. Méth.* IX. p. 354. n. 15 (1823) (Caffraria; synonym. "thieste Stoll"!).
- ♀. *Nymphalis xiphares* Godart, *l.c.* p. 357. n. 25 (1823) (Cap. b. sp.); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 19 (1850) (Cap. b. sp.).
- ♀. *Charaxes xiphares*, Doubleday, *List. Lep. Ins. Brit. Mus.* I. p. 111 (1844) (Cap. b. sp.); Butl., *Proc. Zool. Soc. Lond.* p. 631. n. 35 (1865) (Cap. b. sp.; ♀ of *thieste*?).
- ♂ ♀. *Charaxes xiphares*, Boisduval, in Delegorgue, *Voy. Afr. Austr.* II. p. 593. n. 81 (1847) (Pt. Natal; ♀ = *xiphares*, ♂ = *thiestes*); Butl., *Cat. Diurn. Lep. descr. Fabricius* p. 51. n. 7 (1869) (S. Afr.); Trimen & Bowk., *S. Afr. Bull.* I. p. 346. n. 117 (1887) (Cape Colony; Caffraria); *ibid.*, *l.c.* III. p. 408 (1889) (Barberton); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 376. n. 75 (1896) (Cap. b. sp.); Dist., *Ann. Mag. N. H.* (7) I. p. 51 (1898); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 239. n. 42 (1899) (Cape Colony, Caffraria; not Brit. E. Afr.).
- ♂. *Nymphalis thieste* (!), Doubleday, Westw. & Hew., *l.c.* p. 309. n. 18 (1850) (Caffraria; "an *N. xiphares* mas?").
- ♂ ♀. *Nymphalis xiphares*, Trimen, *Rhop. Afr. Austr.* I. p. 157. n. 97 (1862) (pt.); Kirby, *Cat. Diurn. Lep.* p. 270. n. 33 (1871) (Afr. m.).
- ♂. *Charaxes thieste* (!), Butler, *Proc. Zool. Soc. Lond.* p. 631. n. 34 (1865) (Caffraria; " *thurius* Godart," " *thiestessa* Hübn." err. calam.).

♂ ♀. *Body above*, olive black, head and collar more russet brown, four dots on head and a line behind eye white; *beneath* sepia brown, palpi clay colour, with the vestige of a white line close to eye, abdomen dark clay colour in ♂: femora speckled with white scaling.

♂. *Wings above*: bluish black, with pale blue markings, which assume a purplish tint in side-light.—Forewing: four discal spots between R¹ and M², the upper two 1 or 2 mm. from cell, small, the other two a little larger and more distal; a complete series of postdiscal dots, parallel to outer margin, curving basad at both ends, the middle one the smallest, 8 mm. from outer margin, all blue except the upper two, which are white; margin with ill-defined ochraceous dots; fringe white, except at ends of veins.—Hindwing: a blue band across middle from C to abdominal fold, interrupted at SC², indented upon the other veins, proximally sinuate between R¹ and R², width 6 mm. between SC² and R¹, 9 mm. before M², its outer edge, taken as a whole, somewhat convex, posteriorly nearer the margin of wing than in front, distance at M¹ 9 mm.; a complete series of blue submarginal dots, all separated; a series of ill-defined, ochraceous, admarginal spots, which mostly extend to edge of wing upon internervular folds; abdominal fold olive, paler towards abdominal margin.

Underside: sepia brown, outer area slightly shaded with ochraceous, discal interspaces of both wings drab at outer side of median bars; resembling the underside of *bohemani*, but bars of hindwing heavier.—Forewing: bar edged with bluish white; cell-bars almost straight, faintly concave proximally, cell, except apical interspace, drab brown; submedian bars M¹—SM² continuous with one another and with cell-bar 4; bar D thin; median bars R³—SM² in a very oblique row, the last touching discal bar, all three slightly concave distally, with rather heavy bluish white borders, median bar R²—R³ only 1 to 2 mm. from cross-vein; discal series of bars obsolete towards costal margin, contiguous with gallstone yellow halfmoons at outer side up to R¹, between SC⁴ and R¹ the halfmoons are replaced by two white, rounded, dots; contiguous with these spots are the postdiscal patches of which patches M¹—SM² are large and black, while the others are small and olive and ill-defined, patches M¹—SM² heavily bordered with blue distally, the blue scaling between M² and SM² resembling the number 3; admarginal interspaces somewhat ochraceous gallstone yellow, this colour more obvious between M¹ and SM².—Hindwing: basal costal bar farther away from PC than in *Ch. bohemani*: no costal

subbasal bar; costal submedian bar more basal than the other two submedian bars; subbasal and submedian bars C—M nearly parallel, rather closer together than in *bohemani*; bar D thin; costal median bar a little more distal than median bar C—SC², all median bars with rather heavy, white, outer border, bars R¹—R³ continuous, R¹—R² being very little more distal than R²—R³, while bar R³—M¹ is about 2 mm. more distal; discal bars luniform, upper ones less well-defined than the posterior ones, bars R¹—R³ more distal, all followed by ochraceous gallstone yellow halfmoons, which are bordered distally by the ill-defined, more or less patch-like, postdiscal bars; a series of white and blue submarginal spots, posterior ones succeeded by black dots; admarginal interspaces tawny olive; tails short, triangular, blunt, upper one 2½ mm. long, second 2 mm.

♀. *Wings above*: blackish brown, slightly purplish.—Forewing: an oblique band of five patches, upper three between SC⁵ and R³ 1 to 2 mm. from cross veins, fused together, the veins being very thinly brown, about 4 to 5 mm. wide, patch R³—M¹ 7 mm. from base of M¹, diameters 4 and 5 mm., patch M¹—M² obliquely behind it, very oblique, often touching distally the postdiscal spot, behind M² there is often a sixth, small, white spot; a postdiscal series of small spots as in ♂, upper two white, the others more or less ill-defined, sometimes vestigial, buff; marginal dots ochraceous buff, indistinct, except dots M²—SM².—Hindwing: a very broad buff band occupying centre of wing from costal to abdominal margin, about 9 mm. broad behind SC³, 16 mm. in middle, shaded with fuscous behind (SM¹), partition C—SC² often whitish, mostly with a small spot at outer side, often reduced in size and separated from rest of band; band penetrating into cell, its inner edge ill-defined, outer edge convex, not quite parallel to outer margin of wing, more or less indented upon veins, subangulate before R³; a series of pale blue submarginal dots, partly centred white; admarginal interstitial parts transverse, ochreous or ochraceous buff, spots C—SC² absent, SC²—R¹ mostly vestigial; fringe white, except at tips of veins.

Underside somewhat paler than in ♂, drab brown.—Forewing: bars as in ♂; median bar R¹—R² often marked; white discal patches as above, rather wider, bordered proximally by the median bars, of which bars R³—M² are continuous, interspace between curved bar M²—SM² and discal bar also white; postdiscal interstitial spots SC⁴—R¹ white, larger than in ♂, rounded, the following three white proximally, yellow distally.—Hindwing: slightly paler than forewing; median bars with heavy white outer border, which often develops to a white band which is extended to the discal luniform bars, but remains more or less shaded with drab brown distally; white submarginal spots arched, blue ones rather large, except upper two or three; admarginal gallstone yellow interstices rather well-defined; upper tail of nearly even width, rounded at tip, 9 mm. long, second short, triangular, blunt, curving forward, 4 mm. long.

Length of forewing: ♂, 43 mm.

” ” ♀, 50 to 52 mm.

Hab. Cape Colony and Natal. In the Tring Museum 1, ♂ 3 ♀ ♀ from Natal.

“This grand *Charaxes*,” says Trimen, *l.c.*, p. 348, “inhabits the woods of the Cape Colony and of Kaffraria Proper as far eastward as the Bashee river. In Natal it is replaced by the closely allied *C. cithaeron*, Feld., which does not as yet appear to have been taken elsewhere. The actual district in Kaffraria where *xiphares* gives place to *cithaeron* is not known. At Knysna and Plettenberg Bay I met with *C. xiphares* not uncommonly from the middle of December until the middle

of May. Both sexes haunt by preference the outskirts of woods, seeming to delight in short flights of great velocity over open spaces, ending in a return to the tree stem or projecting twig they have quitted. The moist exudations on the trunks and branches always attract this butterfly, and I have frequently seen three or four specimens together busily engaged in drinking at one of the supplies of moisture. I have more than once disturbed a ♀ at rest on quite a low bush, but the ♂, though occasionally descending to within a few feet of the ground, never appears to settle except at a considerable height. Mrs. Barber has often observed the ♀ at highlands near Grahamstown—and I noticed examples there and at Mitford Park in 1870—but singularly enough has never seen the ♂ on the wing. Colonel Bowker, who forwarded several fine examples of both sexes from Kaffraria Proper, noted the species as 'rare' on the Bašhee River. Mr. W. C. Scully, who has lately (1885) observed the species in woods near Seymour (Eland's Post), found that a large number of these butterflies were attracted by the sap exuding from a climbing composite shrub, the stem of which he had wounded for the purpose."

33. *Charaxes cithaeron*.

Charaxes cithaeron Felder, *Wien. Ent. Mon.* III. p. 398. t. 8. f. 2. ♂. 3. ♀ (1859) (Natal); Butl., *Proc. Zool. Soc. Lond.* p. 631. n. 33 (1865) (Natal); Gooch, *Entom.* XIV. p. 6. 7 (1881) (Natal, larva); Spiller, *ibid.* XV. p. 8 (1882) (Natal); Staud., *Exot. Tuff.* p. 170 (1886) (Natal); Dewitz, *Nor. Act. Leop. Car. Ak. Nat. L.* 5. p. 371 (1887) (Ngura); Trim. & Bowk., *S. Afr. Butt.* I. p. 345. n. 116 (1887) (Natal, metam. !); Butl., *Proc. Zool. Soc. Lond.* p. 649. n. 23 (1893) (Zomba, ♀); Trim., *ibid.* p. 45. n. 71 (1894) (Manica); Butl., *l.c.* p. 256. n. 19 (1895) (Zomba), *id.*, *l.c.* p. 720. n. 14 (1895) (Zomba); *id.*, *Journ. Linn. Soc. Lond.* XXV. p. 375. n. 70 (1896) (Natal; Transvaal; Zomba; Kilimandjaro); *id.*, *Proc. Zool. Soc. Lond.* p. 397. n. 10 (1898) (Brit. E. Afr.); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 239. n. 41 (1899) (pt.; Natal; Transvaal; Manica; Nyassa; Kilimandjaro; Brit. E. A.).
Nymphalis viphares var. *A. (cithaeron)* Felder, Trimen, *Rhop. Afr. Austr.* p. 169. sub n. 97 (1862) (Natal).
Nymphalis cithaeron, Kirby, *Cat. Diurn. Lep.* p. 270. n. 33a (1871) (Natal).

♂ ♀. *Body above* olive black, anteriorly slightly russet, four dots on head, a line behind and two dots on collar cream colour; *underside* clay-colour, sides of breast darker, palpi of both sexes and abdomen of ♂ almost creamy buff, palpi with the vestige of a white line close to eye; femora black with white, dispersed, scales.

♂. *Wings above* blue-black, glossy in basal area, with pale blue markings, which assume a purple tint in side-light.—Forewing: a series of pale blue discal spots; three spots SC⁵—R³ elongate, close to cross-veins, the uppermost often absent, two spots R³—M² more distal, generally smaller, seldom a little larger than the blue-black interspace between them, distally often concave, the second sometimes oblique, two more spots between M² and SM², sometimes vestigial, often merged together; a postdiscal series of spots, parallel to outer margin, but spot SC⁴—SC⁵ more proximal, upper two white, the others pale blue, spot R¹—R² the smallest, diameter about 1 mm., the following often little larger, but sometimes gradually and considerably increasing in size, spots M²—SM² not rarely merged together, forming with the respective discal spots a large square patch, the centre of which shows, however, some blue-black scales of the ground colour, this patch, about 6 mm. from outer margin in front of SM²; along internal margin, behind the discal and postdiscal series, stands a long pale blue patch, varying in length from 8 to 15 mm., often very narrow, sometimes contiguous with patch M²—SM²; marginal dots buffish or bluish, only the posterior ones marked in most individuals;

fringe white, except at ends of veins.—Hindwing: a bluish white patch, which is more white behind than in front, extends from R^1 to abdominal fold, is 6 to 8 mm. broad behind R^1 , and 12 to 14 at M^2 , it stops proximally mostly at D^3 , but apex of cell generally with some bluish white scaling, and reaches behind cell to base of M^2 , outer edge of patch incised at R^2 , and often also at R^3 , mostly slightly concave between posterior veins; the patch is preceded by a rounded or elongate spot in front of R^1 , this spot seldom contiguous with the patch; before SC^2 we find one discal and one postdiscal spot, either of the two often absent, sometimes both wanting; black outer area gradually narrowing behind, 4 to 6 mm. broad at M^1 , 7 to 8 mm. at R^2 ; a complete series of pale blue submarginal spots, well-marked, but spot C— SC^2 occasionally absent, more or less rounded, posterior ones sometimes transverse, mostly with minute white centres; admarginal interstitial spots yellow or yellow buff, transverse, pointing distad at ends, often shaded with blue in middle, or interrupted, posterior ones mostly touching each other at veins, no such spot before SC^2 , spot SC^2 — R^1 also often absent; fringe creamy white between veins; abdominal fold dirty white, clayish distally, often somewhat bluish in centre, base mostly blackish, long hairs in front of it black in basal two-fifths, then dirty white.

Underside pale tawny olive, with a gallstone yellow tint, bars individually variable in thickness.—Forewing: discal interspaces yellowish at outside of median bars, cell often of the same yellow tint; basal cell-bar often indicated by an obscure dot, cell-bar 2 nearly straight, 3 slightly curved, occasionally interrupted, bar 4 mostly distinctly curved twice in costal half: bar D thin, but complete; submedian bars 1 to 2 mm. apart, bar M^1 — M^2 proximal of base of M^1 , but distal of lower end of cell-bar 4, submedian bars and upper cell-bar with a thin bluish white distal border, besides the normal bluish white proximal border, cell-bars 2 and 3 with distinct bluish white border at both sides; median bars R^3 — SM^2 concave distally, sometimes angle-shaped, the bars generally touching each other, forming an oblique series, bars M^2 — SM^2 mostly fused together either to a single half-moon, or to a marking which resembles the number 3, 5 to 7 mm. distant at (SM^1) from discal lunule, median bars R^1 — R^3 1 to 2 mm. from cross-veins, the upper of the two often vestigial or absent; discal bars M^1 — SM^2 distinct, black, regularly arched, the other discal bars vestigial or absent, forming the proximal borders of a series of postdiscal interstitial spots, of which the upper two are white, the others ochreous yellow, and which are situated as on *upperside*; postdiscal bars M^1 — SM^2 represented by black spots, the other postdiscal bars not often vestigial, spots M^2 — SM^2 merged together to a large patch which is incised distally upon (SM^1), and has a conspicuous, pale blue, outer border which resembles the number 3, patch M^1 — M^2 also more or less obviously bordered blue distally; admarginal interspaces ill-defined, wax yellow; marginal dots buff, often obsolete, internal area (or part of it) from (SM^1) to internal margin often fuscous.—Hindwing: bars thinner than on forewing, sometimes partly obsolete; costal subbasal bar at outer side of PC mostly absent, costal submedian bar always in front of subbasal bar C— SC^2 , either straight or pointing distad; costal median bar a very little more proximal than median bar C— SC^2 , or just in front of it; discal bar SC^2 — R^1 generally only 1 mm., seldom 2 mm., more proximal than bar C— SC^2 ; admarginal gallstone yellow interstitial markings paler at veins, shaded with olive buff between veins, especially the posterior ones, anal one all olive buff; white submarginal dots mostly all present, followed by blue ones

of which the upper two or four are often obsolete, and these followed again by black dots which are generally present at least between veins R^2 and SM^2 ; discal bars short and thin, postdiscal ones mostly obsolete, or only vestigial; tails pointed, upper one 5 to 7 mm. long, second 3 to $4\frac{1}{2}$ mm.

♀. *Wings above* purplish seal brown, somewhat paler at base, long hairs in basal area of hindwing olivaceous.—Forewing: a transverse, curved, discal band from costal to inner margin, 1 to 2 mm. from cross-veins, white, slightly shaded with violet at edges, especially behind, its inner edge triangularly sinuate at hinder side of R^3 , convex between the veins, but mostly concave between M^2 and SM^2 , outer edge sinuate between R^2 and R^3 in most specimens, more or less indented upon veins, the band widest (8 to 12 mm.) between M^1 and M^2 , but on the whole of nearly even width, patch at internal margin often prolonged, the streak along costal margin also generally prolonged basad; postdiscal series of spots represented, at least, by two white spots SC^4-R^1 , which are larger than in ♂, often shaded with violet at edges, and followed in many specimens by one to four small buffish white dots the last one of which, between M^1 and M^2 , often touches the band; admarginal buff dots M^2-SM^2 often present.—Hindwing: a large white central patch, much shaded with purple, especially at edges, variable in width, expanded between costal margin and abdominal fold, proximally limited by median bars $C-R^1$, which are vestigial or show through from underside, penetrating a little into apex of cell, or stopping at D^3 , outer edge convex, almost parallel to outer margin, but farther away from it in front than behind, width of patch before R^3 10 to 14 mm., before SC^2 $3\frac{1}{2}$ to 6 mm., at outer side of band before SC^2 there is sometimes an isolated postdiscal spot, similar spots occasionally indicated between SC^2 and R^3 , more or less incompletely isolated; abdominal fold bluish white, buff or clay colour distally; submarginal blue spots as in ♂, often larger, posterior ones mostly transverse; admarginal interstitial spots as in ♂, spot SC^2-R^1 generally better marked, colour varying from cream to ochreous, posterior spots sometimes nearly all blue.

Underside similar to that of ♂, band of forewing as above, but less curved, patch M^2-SM^2 square or posteriorly narrower than anteriorly, often completely divided by a black streak on (SM^1); discal interspaces of hindwing most pale clay-colour at median bars; upper tail of nearly even width, not pointed, 8 to 10 mm. long, second pointed, slightly curved frontad, 4 to 6 mm. long.

Length of forewing: ♂, 42—46 mm.

” ” ♀, 46—52 mm.

Penis closely resembling that of *Ch. bipunctatus*, being armed with a sinistrolateral subapical tooth and, proximally, with a dorsal tooth-like ridge.

Hab. East Africa from Natal northwards to Nyassaland, German and British East Africa; its northern limit is most likely the Victoria Nyanza and the hills south of the Kenia. In the Nandi country the western *Ch. smaragdalis* already appears. In the Tring Museum 2 ♂♂, 12 ♀♀ from: Durban, Natal; Rikatla, Delagoa Bay; Lauderdale, and Zomba (October to December), Brit. C. Afr.; Mikindani, Germ. E. Afr.; Mombasa.

The *males* from Natal, Delagoa Bay, Nyassaland, Mozambique, and the coast region of German East Africa do not apparently exhibit any geographical variation, the *females* from Mombasa, British East Africa, differ obviously from the individuals from the other localities mentioned; while in the Natal ♀♀ the white band of the forewing above is 8 to 10 mm. distant from outer margin of

wing behind M^2 , the distance is only 6 mm. in the ♀♀ from Mombasa, the band being broader in these individuals (11 mm.); on the hindwing the band is also very wide in the latter specimens, the black outer area of the wing measuring only 8 mm. at M^1 , the band is 15 mm. wide at M^2 in one specimen, 16 mm. in the other; the discal bar M^2-SM^2 separating the white band on the underside of the forewing from the yellow lunule is very thin, being composed of scattered black scales, and the median bar M^2-SM^2 is less oblique than in the ♀♀ from other places.

A ♀ in the Berlin Museum from Usaramo, German East Africa (Stublmann) agrees fairly well with the Mombasa examples. It is possible that the differences here pointed out will be found to be more or less constant.

Dr. Trimen (*l.c.*) gives the following description of the larva and the habits of *Ch. cithaeron* :—

“LARVA.—Deeper or lighter green, closely granulated with yellow, on back; light bluish green or light bluish grey on under surface; a chrome-yellow lateral-inferior stripe from second segment to anal extremity, which is bifid into two acute processes of the same yellow as the stripes. On sixth and eighth segments the yellow stripes are connected by a backward-curved, almost semicircular, transverse, yellow stripe; on back, just preceding the hinder portion of each transverse stripe, a dark purple spot, composed of two small spots connected by indistinct purple lineolæ. On each side of eleventh segment, a small yellow spot, just above longitudinal stripe. Head rather large, green, surmounted by four serrated green horns (of which the two middle ones are longer than the others and divergent); face and outer edge of horns bordered with yellow; between the two middle horns a pair of small, acute, black-pointed tubercles. Feeds on the flat-crown acacia (*Zygia fastigiata*) in March and April.

“PUPA.—Light green, slightly maculated with white. A silvery white line running along curved edges of wing covers to summit of head, interrupted on the line of the antennæ. Anal segment produced, and bearing three pairs of small pointed tubercles.

“The above description of the larva and pupa are made from notes and drawings of Natalian specimens communicated to me by Captain H. C. Harford and Mr. W. D. Gooch. The former gentleman wrote that he found several of the larvæ almost full-grown in the month of April, and that shortly before becoming pupæ they changed to a very light green. The butterflies were disclosed after thirteen days' pupation.

“This close ally of *C. xiphares* (Uram.) is readily recognised by the characters given above, which appear to be quite constant. It seems also to be quite a local form, as I have seen no examples except from the coast of Natal, and have found no record of its occurrence elsewhere.

“At D'Urban, Port Natal, *cithaeron* is of very frequent occurrence. From the middle of February to the beginning of April 1867 I observed many specimens of both sexes, frequenting chiefly the 'sucking places' on the stems and branches of *Zygia fastigiata* (the flat-crown acacia), on which tree, as above noted, the larva lives, and of *Acacia lebbeck*. Another favourite resort of this butterfly was an exudation on the stem of *Oncoba spinosa* in the Botanic Garden. In habits and flight it entirely resembles its close congener. I observed a specimen on the wing on June 23rd, 1865; and Colonel Bowker has taken examples in the month of August; but they are only numerous in the summer months. When within reach, specimens engaged in feeding are easily captured. The paired sexes were taken by Colonel Bowker, and sent to me in August 1881.”

34. *Charaxes smaragdalis*.

Charaxes smaragdalis Butler, *Proc. Zool. Soc. Lond.* p. 630. n. 32 t. 36. f. 5. ♂ (1865) (Congo);
id., *Lep. Exot.* p. 5. t. 2. f. 1. ♀ (1869) (Congo).

Differs from *Ch. cithaeron* constantly in the following characters:—

♂. *Wings above*: large blue patches of forewing from M^2 (or M^1) to internal margin a little more distal; band of hindwing pale blue, whitish only proximally at abdominal fold, broader, especially in the middle, than in *cithaeron*, hence black outer area more reduced; admarginal spots blue, nearly white at veins.—*Underside*: bars much heavier than in *cithaeron*, especially on forewing, ground colour darker, more olive, hence the pale yellowish spots more prominent; postdiscal patches of forewing distally bordered by pale bluish half-rings.

♀. *Wings above*: band of forewing more blue behind, less curved; band of hindwing blue, admarginal spots blue, almost white at veins.—*Underside*: darker, bars of forewing a very little thicker, postdiscal patches of forewing as in ♂.

To these distinguishing characters we must add the greater size of the blue patches on the forewing between M^2 and internal margin and on the hindwing between C and R^1 , but these characters vary so much in either species that they cannot serve to distinguish all specimens of the one from all individuals of the other.

A ♂ from Ran, Nandi country, British East Africa, and another from Landana, Congo Free State, have patch M^2 — SM^2 of the forewing not broader than certain examples of *Ch. cithaeron* from Natal and Nyassaland.

Penis and penis-funnel as in *Ch. cithaeron*.

Hab. West Africa from Sierra Leone to Angola, and as far east as the Nandi country in the Uganda Protectorate.

Ch. cithaeron and the two local forms of *Ch. smaragdalis* are geographical representatives. The characters of the individual from British East Africa mentioned before (unfortunately in a very bad state of preservation) make it probable that a longer series from the interior of British East Africa will show all the connecting links between *smaragdalis* and *cithaeron*, which are as yet wanting.

Charaxes smaragdalis has, like most of the *Charaxes* with a wide range, developed into a north-western race extending from Sierra Leone to the Gold Coast and an equatorial race found from the Niger Coast to the Congo basin and the Uganda Protectorate.

Dr. Butler described *Ch. smaragdalis* from the Congo in 1865; the name of *smaragdalis* must, therefore, be applied to the equatorial race (and to the entire species). In 1896 Dr. Butler described again as *Ch. princeps* specimens from the Cameroons which he thought to be specifically distinct from *Ch. smaragdalis* on account of the reduction of the blue patch M^2 — SM^2 on the forewing and the greater extent of blue in the marginal region of the hindwing. These and some other points mentioned by Dr. Butler, indeed, hold good, on the whole, if one compares Cameroons examples with individuals from Sierra Leone and the Gold Coast, but not if “*princeps*” is compared with Congo specimens. Our series of specimens from the Congo basin shows clearly that *princeps* is nothing else but *smaragdalis*. The main character by which all the examples from the Cameroons and Congo can be distinguished from the specimens from the more northern parts of the West Coast, namely the greater size of the discal series of spots on the upperside of the forewing as

compared with the postdiscal series, is not mentioned by Dr. Butler. As *princeps* applies, therefore, to the same race to which the name of *smaragdalis* was originally given, the north-western race requires a name.

a. *Ch. smaragdalis smaragdalis*.

Charaxes smaragdalis Butler, *l.c.* t. 36. f. 5. ♂ (1865); *id.*, *Lep. Exot.* p. 5. t. 2. f. 1. ♀ (1869); Godm. & Salv., in Jameson, *Story Rear Columu* p. 440. n. 84 (1890) (Yambuya); Auriv., *Ent. Tidskr.* XII. p. 216. n. 145 (1891) (Cameroons); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 375. n. 71 (1896) (pt.; Cameroons, Congo); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 238. n. 37 (1899) (pt.; Cameroons, Congo).

Nymphalis smaragdalis, Kirby, *Cat. Diurn. Lep.* p. 270. n. 33b (1871) (Congo).

Charaxes cithaeron, Dewitz, *Nor. Act. Leop. Car. Ak. Nat. L.* 4. p. 371 (1887).

Charaxes princeps Butler, *l.c.* p. 376. n. 72 (1896) (Victoria, Cameroons).

Charaxes smaragdalis var. (ab.?) *princeps*, Aurivillius, *l.c.* p. 238. sub n. 37 (1899) (Victoria, Cameroons).

♂. *Wings above*.—Forewing: discal spots very much larger than the postdiscal ones, spot M^1 — M^2 at least twice (mostly three or four times) as large as the respective postdiscal one, separated from it, obliquely concave distally; patch M^1 — M^2 complete or subdivided by one or two black spots into a larger discal and smaller postdiscal portion, its outer edge mostly biconcave, $2\frac{1}{2}$ to $3\frac{1}{2}$ mm. from edge of wing before SM^2 , breadth of patch $5\frac{1}{2}$ to 12 mm.; postdiscal spots R^1 — M^1 often minute; outer edge of wing sometimes very feebly concave, and the apex less acute than in the north-western race, but this character is quite inconstant.—Hindwing: blue area expanded between SC^2 and abdominal fold, patch SC^2 — R^1 not separated, but often reduced in width; in front of SC^2 there are two spots, often merged together to one large patch which is generally sinuate in front, but is occasionally complete, proximal spot seldom obsolete, blue one much extended distad, in many specimens reaching blue admarginal spots, in which case the black area between blue patch and admarginal spots is posteriorly divided into more or less small spots in which are situated the white and blue submarginal dots.

Underside: median bars R^2 — M^2 of forewing strongly concave, bars M^2 — SM^2 very heavy, fused to a W-shaped mark.

♀. *Wings, above*.—Forewing: band 2 to 3 mm. from outer margin before SM^2 ; a series of postdiscal spots, upper two larger and white, the others minute and blue.—Hindwing: blue area extended distally as in ♂, the black outer area reduced in width, posterior patches more or less isolated, outer edge of blue area regularly concave between veins from R^1 — SM^2 .

Length of forewing: ♂, 42—50 mm.

” ” ♀, 50 mm.

Hab. Niger to Angola and Uganda Protectorate. In the Tring Museum from: Rau, Nandi Country, Uganda Protectorate, December 12th, 1898 (Dr. Ansorge), 1 ♂; Landana, 1 ♂; Congo and Kassai Country, 6 ♂♂, 1 ♀. In the British Museum from Victoria, Cameroons, and Congo; in the Berlin Museum from Angola (Mechow), and Old Calabar; Dr. Standinger has a ♀ from Lambarené, Ogowé.

In the width of patch M^2 — SM^2 of the upperside of the forewing, the Rau specimen, as said before, does not essentially differ from certain examples of *Ch. cithaeron*, being only $5\frac{1}{2}$ broad, the patch stands, however, closer to the outer margin; on the hindwing patch SC^2 — R^1 measures only $3\frac{1}{2}$ by 4 mm., and the patch before SC^2 is divided up into two well-separated spots.

b. Ch. smaragdalis butleri Rothsch., subsp. nov.

Charaxes smaragdalis, Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 375. n. 71 (1896) (pt.; Sierra Leone); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 238, n. 37 (1899) (pt.; Sierra Leone).

♂. *Wings, above.*—Forewing: patch M^2-SM^2 always complete, 5 to 7 mm. from edge of wing before SM^2 , distally concave or nearly straight; discal and postdiscal spots M^1-M^2 never quite separate, always merged together to one patch, which is deeply sinuate in front, the postdiscal portion mostly larger than the discal one, seldom somewhat smaller; postdiscal spot R^3-M^1 as large as the discal spot R^3-M^1 , often larger, seldom a little smaller, postdiscal spots ovate, none of them concave distally.—Hindwing: blue area less wide than in *smaragdalis*, patch $C-SC^2$ not separated into a discal and postdiscal spot, the patch includes, however, often a black ovate spot which is not rarely joined to the black basal area, outer edge of blue area less regularly concave between veins than in *Ch. sm. smaragdalis*; the black outer area, though partly constricted at veins, not interrupted from C to SM^2 .

Underside darker olive than in *sm. smaragdalis*, hence the patches of yellow clay-colour more prominent; bars in basal area of forewing a little thinner than in most *sm. smaragdalis*, bars M^2-SM^2 forming a less heavy and less regularly W-shaped mark.

♀. *Wings, above.*—Forewing: band 6 to 8 mm. from outer margin before SM^2 .—Hindwing: blue area less extended than in *sm. smaragdalis*, not so regularly concave between veins, indented upon SC^2 , often also upon R^1 and R^2 , partition $C-SC^2$ either complete or divided into a discal and a postdiscal portion; black outer area gradually narrower behind, not interrupted, but more or less constricted at veins M^1 and M^2 , about 5 mm. broad between M^1 and M^2 .

Underside darker olive than in *sm. smaragdalis*.

Length of forewing: ♂, 43—48 mm.

” ” ♀, 48—55 mm.

Hab. Sierra Leone to Gold Coast. In the Tring Museum from: Sierra Leone (*type*) 18 ♂♂, 14 ♀♀; Gold Coast, 3 ♂♂, 5 ♀♀.

This subspecies is named in honour of Dr. Butler, who has twice given a revision of the genus *Charaxes*, and who is doubly associated with the present species as author.

*d*¹. Hindwing without a broad pale blue, white, or buff band, or the basal half of the forewing below is bluish grey.

35. *Charaxes monteiri*.

Charaxes monteiri Staudinger, *Exot. Tagf.* p. 170. t. 59. ♂, ♀ (1886) (S. Thomé); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 376. n. 73 (1896); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 238. n. 38 (1899).

♂♀. Body *above* bistre brown in ♂, tawny bistre in ♀, four dots on head, a line behind eye, a dot on pronotum laterally and another on tegula before wing creamy white; *underside* in ♂ creamy buff, breast darker at sides, palpi cream colour, in ♀ clay colour.

♂. *Wings, above* blue-black, glossy blue in side-light, with greenish reflections on hindwing.—Forewing: a discal and a postdiscal series of purplish blue spots,

spots M^2 — SM^2 merged together to a large patch as in *Ch. smaragdalis butleri*, concave distally, measuring about 8 mm. upon (SM^1), contiguous with a broad streak at internal margin, which reaches almost end of SM^2 ; discal spots SC^5 — R^3 elongate, separated by the blue-black veins, spot R^1 — R^2 the longest, spots R^3 — M^2 shorter and broader, convex proximally, somewhat concave distally; postdiscal spots R^2 — M^2 triangular, concave distally, pointed proximally, spot M^1 — M^2 joined to the discal one between veins, spot R^3 — M^1 nearly reaching discal one, postdiscal spots SC^5 — R^2 somewhat smaller, not distinctly triangular, spot SC^4 — SC^5 the smallest, somewhat white in centre.—Hindwing: a purplish blue disco-postdiscal band of seven patches, all separated from one another by the blue-black veins, all concave distally, the posterior ones joined along the veins to the blue admarginal spots as in *Ch. smaragdalis smaragdalis*; length of patches C— M^1 between veins 4, 8, 10, 10, 9 mm. respectively, patches M^1 —(SM^1) reaching base of M^2 ; submarginal dots as in *smaragdalis*, blue, partly with minute white centres.

Underside, distal part of discal interspaces, postdiscal and submarginal interspaces of forewing bistre, rest of forewing and submedian, postdiscal, submarginal, and proximal portion of discal interspaces of hindwing of a peculiar bluish grey colour. Forewing: cell-bars similar to those of *Ch. smaragdalis*, bar 4 deeply incurved in costal half, upper end pointing distad; bar D rather heavy; submedian bars M^1 —(SM^1) concave proximally, nearly touching each other, bar M^1 — M^2 just distal of base of M^1 ; median bars SC^3 — R^3 , 3 mm. from cross-veins at R^2 , bars R^3 — SM^2 concave distally, contiguous, bar R^3 — M^1 6 mm. from base of M^1 , $3\frac{1}{2}$ to 4 mm. from bar D, bar M^2 (SM^1), 5 to 7 mm. from bluish grey postdiscal lunule at (SM^1); discal bars obsolete, last ones vestigial, their outer borders rather clearly defined on account of the postdiscal bluish grey interstitial half-moons; postdiscal bars M^1 — SM^2 represented by black patches.—Hindwing: costal subbasal and submedian bars joined together in front to a half-ring, the costal submedian bar standing in front of the subbasal bar C— SC^2 ; cell-bar 4 curving basad posteriorly, joining (or nearly so) cell-bar 2; median bars olivaceous, thin, posterior ones partly obsolete, costal one not or very little more basal than bar C— SC^2 , bars SC^2 — R^1 and R^2 — R^3 a little more basal than R^1 — R^2 ; submarginal dots black; tails short and blunt.

♀. *Wings, above*.—Forewing: brownish black, base and internal marginal area burnt umber; a broad, white, oblique band from middle of costal margin to SM^2 , 15 mm. wide between M^1 and M^2 , 6 mm. before R^1 , its inner edge irregular, outer edge indented upon and between veins, between M^2 and SM^2 the band nearly reaching margin of wing, the white scaling almost surrounding a large postdiscal, black patch, which is sometimes divided at (SM^1); two, rather large, white postdiscal spots SC^1 — R^1 , followed by traces of one or two more.—Hindwing: raw umber, darker towards base, clayish cream colour at anterior angle, fringe clayish creamy, more extended brown at ends of veins R^2 to SM^2 ; a complete series of blue submarginal spots, centred white, placed in ovate, postdisco-submarginal, black patches, which are separate, and of which the second is the largest, measuring 7 mm. in length, these patches pointed distally and proximally; admarginal line very heavy between veins.

Underside.—Forewing: basal area very pale olive, more grey at the bars; white band as above, but extending to outer margin at internal angle, including the two postdiscal, black patches M^2 — SM^2 ; median row of bars at inner edge of band more oblique than in ♂; postdiscal spots R^1 — M^1 bluish white, well marked,

the last one merged together with the band; postdiscal spots SC⁴—M¹ olive, bordered distally by clayish grey arches, spots M¹—SM² black.—Hindwing: nearly as in ♂, submedian interspaces and proximal portions of discal interspaces pearly grey, discal bars obsolete, except the last, postdiscal interstitial lunules bluish grey, bordered distally by the more or less obsolete, brown, postdiscal uniform bars; submarginal brown spots transverse, preceded by a series of white, submarginal, transverse, spots; admarginal line thinner than above, extreme edge of wing clay colour; tail R³ blunt, second tail a short, blunt, tooth.

Length of forewing: ♂, 43—44 mm.

” ” ♀, 49 mm.

Hab. St. Thomé. In the Tring Museum 1 ♂, 1 ♀, received by Felder from Dr. Staudinger, and 2 ♂♂ collected by A. Mocquerys in October and November 1899.

A very interesting insect, a representative of *Ch. tiridates* resembling, in the pattern of the upperside of the ♂, *Ch. smaragdalis*.

36. *Charaxes tiridates*.

- ♂. *Papilio Eques Achivus tiridates*, Cramer, *Pap. Exot.* II. p. 100. t. 161. f. A. B (1777) (“Java,” “Amboina,” loc. err.); Goeze, *Ent. Beytr.* III. 1. p. 87. n. 68 (1779); Fabr., *Spec. Ins.* II. p. 111. n. 43. (1781) (“Amboina” loc. err.); id., *Mant. Ins.* II. p. 6. n. 47 (1787); Jabl. & Herbst, *Naturs. Schmett.* IV. p. 55. n. 150. t. 62. f. 3. 4 (1790) (“Amboina,” “Brasilien” loc. err.); Gmel., *Syst. Nat.* I. 5. p. 2235 n. 300 (1790) (“Amboina” loc. err.).
- ♂. *Papilio Nymphalis Phaleratus tiridates*, Drury, *Illustr. Exot. Ins.* III. p. 31 & Index t. 23. f. 1. 2 ♂ (1782) (“Brazil” loc. err.).
- ♂. *Papilio Nymphalis tiridates*, Fabricius, *Ent. Syst.* III. 1. p. 62. n. 195 (1793) (“Amboina” loc. err.).
- ♀. *Papilio Nymphalis murica* Fabricius, *l.c.* p. 113. m. 346 (1793) (Africa, Mus. Banks).
- ♂. *Papilio tiridates*, Donovan, *Ins. of India* t. 23. f. 3 (1800) (“Amboyna” loc. err.).
- ♂. *Eriboea tiridatis* (!), Hübner, *Verz. bek. Schmett.* p. 47. n. 429 (1816—27).
- Nymphalis tiridates*, Godart, *Enc. Méth.* IX. p. 354. n. 14 (1823) (“Java,” “Amboina,” loc. err.); Lucas, *Hist. Nat. Lep. Ec.* p. 119. u. 62. f. 2 (1835) (“Java,” “Amboina,” loc. err.); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 11 (1850) (Ashanti); Trim., *Rhop. Afr. Austr.* p. 172. n. 99 (1862) (“Mosekatze’s country” loc. err.); Kirby, *Cat. Diurn. Lep.* p. 269. n. 26 (1871) (Africa); Mabille, *Bull. Soc. Zool. France* I. p. 280 (1876) (Congo; Gaboon).
- ♀. *Papilio murica*, Donovan, *Nat. Reposit.* II. t. 37. f. 2 (1834) (Africa).
- Charaxes tiridates*, Thon., *Naturg. Schmett.* p. 73. t. 36. f. 543. 544. ♂. (1837) (“Java,” “Amboina,” loc. err.); Doubl., *List. Spec. Lep. Ins. Brit. Mus.* I. p. 111 (1844) (Ashanti; Congo); Butl., *Proc. Zool. Soc. Lond.* p. 629. n. 28 (1865) (Sierra Leone; Ashanti; ♂ = *tiridates*, ♀ = *murica*); id., *Cat. Diurn. Lep. descr. Fabricius* p. 52. n. 8 (1869); Druce, *Proc. Zool. Soc. Lond.* p. 412. n. 7 (1875) (Angola); Plötz, *Stett. Ent. Zeit.* XLI. p. 194. n. 103 (1880) (Abo, January); Staud., *Exot. Tagf.* p. 170. t. 59. ♂ (1886) (Guinea; Angola; Fernando Po); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371 (1887) (Jan., Feb., April, S. of Congo, Mukenge); Capronn, *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 67 (1889) (Kassai); id., *l.c.* p. 146. n. 81 (1889) (Congo); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 88 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story Rear Col.* p. 440. n. 82 (1890) (Aruwimi); Auriv., *Ent. Tidsskr.* XII. p. 215. n. 141. (1891) (Camerouns); Butl., *Proc. Zool. Soc. Lond.* p. 649. n. 24 (1893) (L. Mweru); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 191. n. 54 (1893) (Togo); Sharpe, *Proc. Zool. Soc. Lond.* p. 341. n. 49 (1894) (Usoqa to Uganda, 4000 ft., June); Auriv., *l.c.* XV. p. 311. n. 193 (1894) (N’Dian, Bonge, III. v. XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 377. n. 77 (1896) (pt.; S. Leone; Accra; Lake Mweru; Ashanti; Isubu); Auriv., *Kongl. Sv. Vet. Akad. Handl.* XXXI. 5. p. 239. n. 43 (1899) (pt.; Sierra Leone to Angola, Lake Mero and Uganda).
- Charaxes tiridates* var. *mictus* Butler (*nou* Rothschild), *l.c.* (1896) (♀, not ♂).

♂♀. *Body above*: olive black in ♂, with a faint blue tint; head, pronotum and anterior part of mesonotum more or less mummy brown; tawny olive in ♀; four dots on head, a line behind eye and a dot laterally on collar creamy buff;

underside clayish cinnamon, sides of breast more bistre, palpi pale clay-colour, mostly with a vestige of a white line near eye, abdomen of ♂ varying from creamy buff to clay colour.

♂. *Wings above*: blue-black, basal half of forewing and basal two-thirds of hindwing with a strong blue gloss.—Forewing: two series of small pale blue spots; the discal series oblique, consisting of the four spots R^1 — M^2 , often followed by a fifth spot M^2 —(SM^1), spot M^1 — M^2 seldom absent, often obliquely halfmoon-shaped, spots R^1 — R^2 linear, spot R^2 — R^3 rounded, both 1 to 2 mm. from cell, sometimes there is a thin linear spot before R^1 , spot R^3 — M^1 more distal, rounded or halfmoon-shaped, postdiscal series complete, upper spot white, mostly larger than the other, the series first convex, then concave, and straight from M^1 to SM^2 or internal margin last spot often wanting, spot (SM^1)— SM^2 also often absent; a complete series of pale ochreous marginal spots, well defined, spots R^2 — M^2 transverse, luniform, the others shorter, dot SC^4 — SC^5 often vestigial.—Hindwing: a postdiscal series of seven pale blue spots, all separate, the series biconcave, the second spot farthest from outer margin, distance 10 to 14 mm., the last spot closest to margin, spot C — SC^2 rounded, generally the largest of all, diameter $1\frac{1}{2}$ mm., the other more or less halfmoon-shaped; a complete series of submarginal spots, parallel to outer margin, the spots more or less rounded, blue, centred white, white centres of upper spots often absent; admarginal interstitial spots pale ochraceous, sharply defined, luniform, interrupted or constricted at internervular folds, well separated from one another, often buffish near veins; edge of wing and fringe buffish white between veins.

Underside: olive cinnamon, varying a little in the depth of the tints, forewing mostly more yellowish than hindwing.—Forewing: borders of bars bluish white, rather thin; basal cell-bar often vestigial, bar 2 straight, 3 curved, sometimes interrupted, often $1\frac{1}{2}$ mm. broad, bar 4 convex in middle and concave in costal half, upper end sometimes dilated basad along SC , forming a sharp hook; bar D complete; submedian bars M^1 —(SM^1) 1 to 3 mm. distant from one another, bar M^1 — M^2 just proximal of base of M^1 , seldom distal of it; median bars R^1 — R^3 1 to 2 mm. from cross-veins, not or little thicker than bar D , median bars R^3 — SM^2 in an oblique row, continuous, or almost so, all curved, bars M^2 — SM^2 fused to a somewhat 3-shaped mark which often touches posteriorly discal bar M^2 — SM^2 ; discal bars M^1 — SM^2 thin, black, regularly arched, the other discal bars vestigial or absent, contiguous with postdiscal interstitial halfmoons of which the posterior ones are well defined and clayish gallstone yellow, uppermost white, more rounded, second also often whitish; postdiscal bars M^2 — SM^2 represented by two large black patches which are bordered very pale blue distally, the blue border resembling the number 3, postdiscal patch M^1 — M^2 smaller, olive black, more or less indistinctly bordered pale blue, the other postdiscal patches vestigial, not or little darker than the ground colour, but often rendered more obvious on account of the paler clayish buff borders; margin with indistinct clayish buff spots; cell, submedian interspaces and proximal portions of discolours pale clayish wax-yellow.—Hindwing: bars thinner than on forewing; basal costal bar not touching PC , $1\frac{1}{2}$ mm. distant from it, mostly straight, seldom curved and pointing distad; subbasal costal bar bordering PC joined together with costal submedian bar to form a half-ring; costal submedian bar in front of subbasal bar C — SC^2 ; cell-bars 2 and 4 mostly joined together behind, as are often subbasal and submedian bars C — SC^2 in front; costal median bar in front of median bar C — SC^2 , which is S-shaped, or very little more proximal, median bar SC^2 — R^1 arched, $1\frac{1}{2}$ to 3 mm. more proximal than bars C — SC^2 , and

R¹—R², bar R²—R³ arched, about 1 mm. from base of M¹, bars R³—SM² nearly continuous, crossing M¹ about 3 to 4 mm. from base; discal bars all regularly arched, only the posterior ones well marked, the others obsolete or absent, but the white distal borders more or less preserved, postdiscal bars represented by olive brown, ill-defined, patches, but bars M¹—SM² thin and arched, sometimes tawny olive, but mostly black; submarginal dots white and blue, followed by black dots, upper black dots absent from most specimens; admarginal interspaces occupied by creamy buff spots, which are generally shaded in middle by olive buff; admarginal line fuscous, forming lunules between veins; submedian interspaces and small patches at outside of median bars pale clayish wax yellow; tails pointed, upper one 3 to 5½ mm. long, second 2 to 3 mm.

♀. *Wings above*: pale tawny olive.—Forewing: apical half blackish brown, with a purplish sheen in side-light, variable in the depth of the brown tint; a white, oblique, posteriorly slightly curved, discal band crosses wing from costal margin to SM², generally well separated by the veins into patches, patch R¹—R² about 10 mm. long, patches R³—SM² more or less sinuate distally, patch M¹—M² very oblique proximally, patches M²—SM² much smaller, often much shaded with tawny olive, the patches more or less heavily bordered blackish brown proximally, upper angle of cell also blackish brown; a postdiscal series of two larger white spots followed by four indistinct tawny olive ones, spot M¹—M² contiguous with the white band; marginal spots much less obvious than in ♂, in most individuals the last two alone well marked.—Hindwing: median bar C—SC² generally marked, with a white patch at outside, white is seldom obsolete; a postdisco-marginal band of the colour of the apical area of the forewing, bordered proximally by a series of more or less vestigial clayish spots which correspond to the blue postdiscal spots of the ♂, the band convex between veins proximally, wider in front than behind; within it we find a series of purplish blue submarginal spots, mostly with white centres, and a series of clayish buff, transverse, spots, constricted or interrupted at the inter-nervular folds; extreme edge clayish between veins, fringe white, except at ends of veins.

Underside: similar to ♂. Black bars of forewing heavier, median bars more oblique, bar R³—M¹ more straight, generally at right angles to M¹, seldom touching upper end of oblique bar M¹—M²; band less interrupted at veins than on *upperside*; discal bar M²—SM² often obsolete; black postdiscal patches M¹—SM² smaller than in ♂. Upper tail of nearly even width, not pointed, 7½ to 9 mm. long, second 2 to 4 mm.

Length of forewing: ♂, 44—52 mm.

 " " ♀, 48—58 mm.

Clasper not essentially different from those of the allied species, upper edge irregularly notched and dentated before tip (Pl. VIII., f. 26); penis with a single dorsal tooth 1 mm. before tip (Pl. VIII., f. 7) and a rather high dorsal ridge about 2½ mm. before apex, the ridge variable in outline.

Hab. From Sierra Leone to Angola and British East Africa and (according to Butler) Brit. Central Africa; not in the coast regions of East Africa, nor in South Africa; a common insect. In the Triug Museum 70 ♂♂, 20 ♀♀ from: Sierra Leone; Accra; Coomassie; O. Calabar; Cameroons; Gaboon and Ogowé; Congo: Stanley Pool, Lukolele, Bopoto, Kassai; Aruwimi Forest (Dr. Ansorge); Unyoro (Dr. Ansorge); Warringo R., 9. vii. 97, Kaligire, 5. i. 98, Fajao, 18. vii. and 10. xii. 97; Uganda Protectorate (Dr. Ansorge): Itau, Nandi country, Mareh 1898.

A ♂ from Cameroons in Mr. Grose-Smith's collection has no admarginal spots on the upperside of the hindwing.

Boisduval, in Delegorgue *Voy. Afr. Austr.* II. p. 593, records *tiridates* from the country of Moselekatze (Zululand), in which he was wrong; the specimens were either wrongly located, or they belonged to another species (*xiphares* or *eithaeron*).

37. *Charaxes bipunctatus*.

Charaxes bipunctatus Rothschild, Nov. Zool. I. p. 536. n. 4 (1894) (Gold Coast?); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 378. n. 78 (1896) (Accra); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 240. n. 44 (1899) (Ashanti).

♂. Closely resembling *Ch. tiridates*. *Wings above*, strongly purplish.—Forewing: outer margin on the whole less concave than in *tiridates*; discal spots small, two to five in number, postdiscal series represented by one small, bluish white, spot SC¹—SC⁵ only, which is sometimes followed by traces of a second, blue, spot; marginal spots as in *tiridates*, but less well defined, being shaded with black.—Hindwing: postdiscal series of spots represented by two rounded dots C—R¹, variable in size, followed sometimes by a third, vestigial, spot; submarginal dots smaller than in *tiridates*; admarginal interstitial markings ochreous buff, prominent, slightly shaded with blue upon internervular folds, but not obviously interrupted.

Underside more uniformly dark cinnamon than in *tiridates* and *mixtus*; median bars of forewing as in *tiridates*, bars M²—SM² mostly merged together to a rather regularly curved halfmoon; costal submedian bar of hindwing and median bar SC²—R¹ more or less straight, submedian and subbasal bars farther apart than in *tiridates*, not curving towards one another at C and M; tails reduced to two short teeth.

♀. Similar to ♀ of *tiridates*; submarginal blue and white dots of hindwing minute, admarginal buff markings prominent, as in ♂, not divided at the internervular folds.

Underside as in ♂, bars of hindwing thinner than in *tiridates*; white band as above, discal bar M²—SM² absent; tails reduced to short teeth.

Length of forewing: ♂, 44—45 mm.

“ “ “ ♀, 47—48 mm.

Clasper rather broader at tip than in *tiridates*, the hook somewhat different in outline (Pl. VIII. f. 28.); the penis has the subapical tooth sinistro-lateral, as in *mixtus*, but rather more ventral, the dorsal ridge reduced to a heavy tooth (Pl. VIII. f. 9.).

Hab. Gold Coast to Aruwimi Forest. In the Tring Museum 6 ♂♂, 2 ♀♀ from: Kumassi to Cape Coast Castle, iv. 99 (Capt. Gifford); Lukolele to Stanley Pool (Harrison); 2 and 3 days' march from Ft. Beni, great forest of Upper Congo, 6. and 7. v. 99 (Dr. Ansorge); Gold Coast (?).

38. *Charaxes mixtus* (Nov. Zool. V. t. 6. f. 1. ♀).

Charaxes mixtus Rothschild, Nov. Zool. I. p. 536. n. 3. t. 12 f. 8. ♂ (1894) (Lukolele).

Charaxes tiridates var. *mixtus*, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 377. sub n. 77 (1896) (pt.; ♂, not ♀; Victoria, Cameroons); id., *Ann. Mag. N. H.* (6). XIX. p. 124. (1897); Auriv., *Kongl. Sv. Akad. Handl.* XXXI. 5. p. 239. sub n. 43 (1899) (Cameroons; Lukolele and Katanga, Congo).

The specific distinctness of this insect has been doubted. Messrs. Butler and Aurivillius treat it as a “var.” of *tiridates*, which term Aurivillius employs for

geographical forms. *Ch. tiridates* and *mixtus*, however, occur together ; therefore *mixtus* is not a geographical representative of the common *tiridates*. It can also not be a mere individual aberration, because (1) the differences in colour are constant, and (2) the sexual organs of the ♂ are different. The most remarkable feature of *Ch. mixtus* is the similarity of the sexes.

♂. Very close to *Ch. tiridates*, but ground colour and markings of *upperside* more purplish, discal series of spots of forewing less oblique, spots M^2-SM^2 , if present, not so close to postdiscal series, upper two spots of postdiscal series white, marginal spots dirty cream colour, square, situated upon the internervular folds ; postdiscal spot $C-SC^2$ of hindwing much smaller than spot SC^2-R^1 , posterior three or four postdiscal spots often nearly contiguous, sometimes there is a discal spot $C-SC^2$ present, submarginal dots smaller than in *tiridates*, white edged with blue, or blue, admarginal spots blue, upper ones often creamy at veins, not interrupted.

Underside darker olive, less yellowish, than in *tiridates*, outer marginal area shaded with grey, bars of forewing on the whole thinner, median bars R^3-SM^2 less oblique, bars M^2-SM^2 forming a more regularly W-shaped mark, which, moreover, is more proximal than in *tiridates* ; submedian costal bar of hindwing mostly straight, often pointing distad, sometimes curved to PC, no subbasal costal bar at outside of PC.

♀. Like ♂, larger ; blue postdiscal spots of forewing very small, admarginal spots absent, except spots M^2-SM^2 which are blue.

Length of forewing : ♂, 43—51 mm.

” ” ♀, 57 mm.

Clasper slenderer than in *Ch. tiridates*, the hook longer (Pl. VIII. f. 27.) ; penis similar to that of *tiridates*, but the ridge very much reduced (Pl. VIII. f. 8.) and the subapical tooth sinistro-lateral, not dorsal ; penis-funnel broader and blunter than in the allied species.

Hab. Congo and Cameroons. In the Tring Museum 7 ♂♂ from : Stanley Pool to Lukolele, Congo (Revs. Harrison and Clarke) ; a ♀ in the Berlin Museum from Cameroons.

*d*¹. Median bars SC^3-R^2 of forewing below in normal position, 6 to 9 mm. from cell.

*e*². Hindwing above without large admarginal patches.

*g*³. Cell-bars of forewing below black and thin, bar 3 interrupted, or rufous chestnut.

*e*⁴. Cell-bars black.

*c*⁵. Hindwing below without straight rufous chestnut band across disc.

*c*⁶. Abdomen olive black above.

*c*⁷. ♂, cell of forewing above with blue patch ; ♀, band of hindwing white, or bluish only at edges.

39. *Charaxes ameliae*.

Charaxes ameliae Doumet, *Rev. Zool.* (2). XIII. p. 171. t. 5. f. 1. ♂ (1861) (Gaboon) ; *Butl., Proc. Zool. Soc. Lond.* p. 630. n. 30 (1865) (Gaboon ; S. Leone) ; *Hew., Ex. Butt.* V. *Charaxes* t. 5. f. 20. 21. ♀ (1876) (O. Calabar) ; *Dewitz, Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371 (1887) (S. of Congo, January) ; *Capronn., C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 68 (1889)

(Kassai : Congo) ; Auriv., *Ent. Tidskr.* XII. p. 215. n. 142 (1891) (*regius=ameliae*) ; Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893) ; Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 55. (1893) (Adeli, Togo) ; Auriv., *l.c.* XV. p. 310. n. 191 (1894) (Ekundu, N'Dian, Cameroons, March) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 374. n. 68 (1896) (S. Leone) ; Cameroons ; O. Calabar ; Accra) ; Auriv., *Konigl. Sv. Ak. Handl.* XXXI. 5. p. 240. n. 47 (1899) (S. Leone to Congo).

Nymphalis ameliae, Kirby, *Cat. Diurn Lep.* p. 270. n. 28 (1871) (Afr. occ.).

Charaxes regius Aurivillius, *Ent. Tidskr.* X. p. 191 (1889) (Cameroons).

♂ ♀. *Body above* : olive black in ♂, blackish sepia in front, in ♀ bistre brown, thorax more olive, white dots on head and pronotum conspicuous ; *underside* cream colour, sides of breast and legs more grey, abdomen of ♀ clayish buff, seldom drab.

♂. *Wings above* : velvety blue-black, markings pale small blue appearing pearl blue or purplish in side-light.—Forewing : anterior half or two-thirds of the basal thirds of the cell occupied by a triangular patch which is 3 mm. broad at the slightly sinuated apex and includes mostly a black dot at two-thirds of its length (the black dot corresponding to upper part of cell-bar 3 of *underside*), costal margin more or less pale blue (upper layer of scales), except in apical third ; a subrectangular patch R^2-R^3 just beyond apex of cell, about 3 mm. long, three more discal spots between SC^4 and R^2 about 8 mm. from cell, the first of them linear, thin, the second more or less rectangular, about 3 mm. long and $1\frac{1}{2}$ mm. broad, the third linear, often absent ; a postdiscal series of eight spots, almost straight from R^1 to internal margin, spot R^1-R^2 4 mm. distant from outer margin, last spot 9 mm., first spot more proximal, 10 mm. from apex of wing, the spots gradually increasing in size towards internal margin, spot R^1-R^2 the smallest, about 1 mm. wide, spot M^2-SM^2 the largest, about 4 mm. long and $2\frac{1}{2}$ broad, that at internal margin often longer ; a streak of 8 to 11 mm. length at base before SM^2 ; a series of small admarginal dots, dots M^2-SM^2 well separated.—Hindwing : a discal series of patches, as continuation of the postdiscal series of the forewing, extends from C^2 to (SM^1), forming a band which is interrupted at R^1 and incised distally upon R^2 , the band very variable in width, widest behind, extending into apex of cell, patch SC^2-R^1 more or less rounded, a postdiscal patch $C-SC^2$, occasionally reduced to a small lunule, a little more distal than patch SC^2-R^1 , seldom with a discal patch at proximal side ; a series of eight submarginal spots parallel to outer margin, barely 2 mm. distant from it, the spots rounded, of about equal size, diameter $1\frac{1}{2}$ to 2 mm., spots M^2-SM^2 seldom contiguous ; a series of admarginal bars, dilated distad at ends, slightly constricted in middle, almost continuous from R^2 to anal angle, spots $C-R^1$ seldom vestigial ; abdominal fold hair brown, seldom uniform in colour, mostly edged with creamy buff, or assuming a white buff tint beyond end of SM^3 , the long hairs before the fold brownish black, with a chocolate hue, the bases of the hairs paler.

Underside : olivaceous wood brown, with a yellowish tint, shaded with eern drab on hindwing, white borders of black bars slightly bluish.—Forewing : no basal cell-spot, cell-bar 2 curved, bar 3 interrupted into a larger posterior and smaller anterior spot, bar 4 distally convex in middle and concave near both ends, but more obviously so in upper half ; subbasal bar $M^2-(SM^1)$ sometimes represented by a spot ; submedian bar M^1-M^2 just behind, or a little proximal of, base of M^1 , bar $M^2-(SM^1)$ about 2 mm. more proximal, both generally at right angles to veins ; median bars R^3-M^2 slightly concave distally, bar R^3-M^1 5 mm. from base of M^1 , bar M^1-M^2 about 2 mm. more proximal, bar M^2-SM^2 more straight, generally triangularly dilated proximally upon (SM^1), again 2 mm. more proximal than bar M^1-M^2 , at right angles to M^2 , median bar R^2-R^3 touching bar D at lower

angle of cell, bars SC^5-R^2 mostly concave proximally, 8 mm. from cell, ground of wing at outer side of median bars greyish or ecru drab, bluish grey between M^2 and SM^2 , this pale scaling forming ill-defined patches; discal series of bars represented by two black lunules between M^1 and SM^2 , the other discal bars seldom vestigial; postdiscal bars M^1-SM^2 developed to two large black patches, patch M^2-SM^2 incised outwardly upon (SM^1), both patches bordered outwardly by very pale blue scaling, border of double patch M^2-SM^2 extending basad to near the discal bars, resembling the number 3, the other postdiscal patches obsolete, but their pale outer borders fused with the postdiscal, uniform, pale interspaces to more or less complete rings, postdiscal interspaces M^1-SM^2 wax yellow; submarginal bars M^1-SM^2 generally vestigial.—Hindwing: paler than forewing, bars thinner; basal costal bar short, curved, reaching PC at or before angle of this vein; subbasal costal bar absent, subbasal bars C—M continuous; submedian costal bar a little more proximal than the other submedian bars, these almost continuous down to (SM^1), the bars almost straight, submedian interspace ecru drab, nearly white; median bars nearly continuous, standing in an almost straight line which crosses M at base of M^1 , proximal half or two-thirds of discal interspaces occupied by a distally ill-defined band of ecru drab colour; discal bars thin, mostly vestigial or absent, bordered by white lunules at outer side, bars SC^2-R^1 and R^3-M^1 much more proximal than the others; postdiscal bars also curved, generally vestigial, seldom quite absent; postdiscal interspaces varying from tawny olive to olive buff; submarginal black dots vestigial between R^2 and SM^2 , last two always present, minute, the white submarginal dots also more or less vestigial; admarginal interspaces olive tawny, mostly bluish white at veins; submarginal and abdominal areas ecru drab; tails pointed, upper one $2\frac{1}{2}$ to 5 mm. long, second a short tooth.

♀. *Wings, upperside*: burnt number colour in basal area, outer area more blackish, especially on hindwing, with a purplish tint.—Forewing: three series of spots, cream colour or white; four discal patches from R^3 to internal margin, patches R^3-M^2 isolated, oblique, convex proximally, often concave distally, patch M^2-SM^2 triangularly sinuate proximally at (SM^1), about 4 mm. broad at M^2 , often with pale blue scaling at proximal, less often at distal, edge, contiguous with long patch at internal margin, discal patch R^2-R^3 close to cell, spots SC^4-R^2 halfway between cell and postdiscal series, spot SC^4-SC^5 thin, linear, the two others about 4 mm. long, all separated, placed in an oblique row, proximal edge of spot SC^5-R^1 2 to 4 mm. more distal than proximal edge of spot R^1-R^2 ; postdiscal spots nearly placed as in ♂, but second and third farther from margin, spot at internal margin, if present, fused with the discal patch, postdiscal spots more yellowish distally than proximally or all white; admarginal spots small, all separate, nearly touching fringe.—Hindwing: a milky white discal band, about 6 mm. broad in front, tapering behind, reaching abdominal margin at a distance of 4 mm. from end of SM^2 ; basally the band is bordered by pale blue scaling between SC^2 (or R^1) and (SM^1), this scaling consisting of the upper layer of scales extends basad as far as origin of M^2 or a little farther down, distally the band has a narrower pale blue border; between C and R^1 or R^2 there are mostly two or three white postdiscal spots more or less distinctly separated from the white band; a series of white submarginal spots edged with pale blue, upper three white spots the longest, but the posterior spots have wider blue borders; admarginal interstitial spots transverse, triangularly dilated distad at veins, creamy at veins, buff in middle, anal one thin, blue.

Underside: more yellowish than in ♂, white markings better defined,

abdominal area of hindwing not ecru drab.—Forewing: white discal patches larger than above, postdiscal spots SC^1-M^1 rounded, with indications of the discal bars at the proximal, and of the postdiscal bars at the distal side.—Hindwing: white discal band seldom touching discal bars $C-R^1$, generally widely separated from them; submarginal area ecru drab or white only distally, white submarginal spots rather large, but not well defined, white dots M^2-SM^2 , however, minute; admarginal interspaces more or less gallstone yellow except distally near veins; upper tail 5 to 8 mm. long, second 3 mm.

Length of forewing: ♂, 38—48 mm.

“ ” ♀, 42—54 mm.

Clasper longer than in *tiridates* and allies, the hook longer and more gently curved; penis armed with a tooth 1 mm. before end, more or less obviously grooved longitudinally before the tooth, a very feebly raised, long, ridge 3 mm. before end; penis-funnel broad, blunt, if viewed from above, apical hook broad at base but sharply pointed.

Hab. Sierra Leone to the Upper Congo and Nyassaland. In the Tring Museum 35 ♂♂, 19 ♀♀ from: Sierra Leone; Gold Coast; Shabo country, Niger, February 1895 (Dr. Roth); Calabar; Bopoto, Congo; Kassai, Aruwimi forest, three and ten days' march from Ft. Beni, 7. and 14. v. 99 (Dr. Ansorge); Bandawe, Nyassaland, April (F. Watkinson).

The *females* from Nyassaland have the discal spots of the forewing above all white, while in the specimens from Sierra Leone and Gold Coast they are more or less cream colour, at least the upper discal ones. This difference, however, is not constant, as there occur in West Africa, together with cream-spotted specimens, individuals which do not apparently differ from the Nyassaland examples.

In a ♂ from the Kassai country, Congo basin, the cell-bar 3 of the hindwing below is indicated by a black dot.

d. ♂ without blue patch in cell of forewing above; ♀ with blue band on hindwing.

40. *Charaxes imperialis* (Nov. Zool. V. t. 6. f. 5. ♀).

Charaxes imperialis Butler, *Tr. Ent. Soc. Lond.* p. 531. t. 11. f. 3. ♂ (1874) (Whydah, Gold Coast); Kirby, *Cat. Diurn. Lep.* p. 748. n. 40 (1877) (*imperialis* “Murr.”); Butl., *Proc. Zool. Soc. Lond.* p. 570. n. 26 (1887) (Rio del Rey, ♀); Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 374. n. 67 (1896) (S. Leone; Rio del Rey); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 240. n. 46 (1899) (S. Leone; Ashanti; O. Calabar; Bena-Bendi, Congo).

♂ ♀. Body as in *Ch. ameliae*.

♂. *Wings above* velvety black, greenish blue in side-light, slightly glossy at base, especially in cell of forewing.—Forewing: three small, white, discal dots SC^2-R^3 , upper two about 7 mm. from cell, dot R^2-R^3 close to cell; a band of four small, white, postdiscal dots SC^3-R^3 , edged with blue, followed by a larger blue spot, often centred white, and again by three turquoise blue discal patches between R^3 and internal margin, which gradually increase in width, patch at internal margin about 5 mm. long, patch M^2-SM^2 proximally sinuate at (SM^1), the series straight from internal margin to R^1 , then curving costad; minute blue admarginal dots, sometimes absent except dots M^2-SM^2 ; fringe restricted white between veins; apex of wing rather acute.—Hindwing: a turquoise blue discal band from SC^2 to (SM^1) as a prolongation of the band of the forewing, about 5 to

7 mm. broad, obliquely cut off posteriorly, preceded by a white discal spot C—SC², edged with blue, and a blue postdiscal spot, the former sometimes vestigial; submarginal spots turquoise blue, upper two the largest, diameter about 1½ mm., more or less rounded, the others more transverse, last two seldom with vestiges of white centres; admarginal spots the same colour, thin, interrupted between veins, spot C—SC² always, the following one or two sometimes absent; abdominal fold grey or clayish grey near margin.

Underside olive wood brown, tinged with tawny olive, with a bluish olive grey gloss in side-light, subbasal to median bars thinly bordered with bluish grey at both sides.—Forewing: basal cell-bar seldom indicated by a dot, cell-bars 2 to 4 nearly equal in thickness, barely ½ mm. broad, bar 3 mostly interrupted, bar 4 convex distally in middle, concave in upper half; submedian bar M¹—M² proximal of base of M¹, bar M²—SM² generally angle-shaped, ½ to 1½ mm. more proximal than bar M¹—M²; median bars R¹—SM² one behind the other, not continuous, bars R³—M² curved, bar M²—SM² straight or angled upon (SM¹), the tip of the angle pointing distad, bar R³—M¹ often very short, about 6 mm. from base of M¹, bar R²—R³ 1½ mm. from bar D, bars SC⁵—R² 9 mm. from cell, short, thin, bars SC⁵—R³ with a small white spot at outer side; discal bars M¹—SM² black, thin, curved, the others vestigial or absent, followed by five postdiscal dots between SC⁴ and M¹, white, distally yellowish, bars M¹—SM², however, with a bluish distal border followed by gallstone yellow, heavy, halfmoons; postdiscal bars M²—SM² represented by a large double patch, deeply incised distally upon (SM¹), with pale blue outer border resembling the number 3; bar M¹—M² represented by the vestige of a second patch; outer margin with an indistinct band of 2 mm. width, which is slightly more yellow than the disc; internal margin blackish near angle.—Hindwing: subbasal and submedian series of bars stopping at M, but there is occasionally a minute submedian bar behind M near origin of M²; basal costal bar curving distad touching PC at angle of this vein, subbasal costal bar absent, submedian costal bar standing in front of the subbasal bar C—SC², curving distad; median costal bar more proximal than the other median bars, curving basad, sometimes joined to submedian costal bar along costal margin, median bars R¹—SM² in an almost straight row, the row slightly broken at R³, bar R²—R³ being about ½ or 1 mm. more proximal than bar R³—M¹, bar C—SC² more basal, more or less concave distally, whitish outer border of bar C—SC² developed to small white spots, similar but smaller spots often between R¹ and R³; discal bars arched, thin, partly obliterated, bluish white distal borders of the upper bars conspicuous; postdiscal bars M²—SM² black, well marked, the other postdiscal bars vestigial, seldom clearly defined, postdiscal luniform interspaces gullstone yellow, often more olivaceous tawny; white submarginal spots present, last two the smallest, but the best defined, shaded with bluish grey, followed by blue and black dots, except the upper ones; admarginal interstitial bars dilated distad at ends, gallstone yellow, constricted in middle, the distal triangular portions near veins bluish grey; tails acute, upper one 3 to 5 mm., second about 2 mm.

♀. *Wings above* blackish brown, purplish, outer area of hindwing rather deeper in tint than rest of upperside.—Forewing: basal half of costal margin chocolate; three series of spots, a discal series: two spots SC⁵—R², about 9 mm. from cell, the second more distal, often a trace of a spot before SC⁵, a square spot R²—R³ close to cell, four spots R³—SM², spot R³—M¹ more or less rounded, 8 mm. from base of M¹, the next a little more proximal, spots M²—SM² placed into blue patches, a

blue patch also behind SM^2 , these discal spots nearly equal in size, more or less buff, spots R^2-R^3 and M^2-SM^2 more creamy, or all creamy white proximally; a postdiscal series parallel to the discal series behind, anteriorly curving costad, spot R^1-R^2 nearest the margin, the series posteriorly gradually retreating from margin, spot $M^2-(SM^1)$ vestigial, spot $(SM^1)-SM^2$ absent, all buff; admarginal spots small, ochraceous buff, not well defined, upper ones obscure; fringe restricted white at internervular folds.—Hindwing: a blue discal band as in ♂, preceded by a large, white, discal patch $C-SC^2$ and a smaller, postdiscal, buff, patch, the latter often shaded with blue; submarginal spots buff, larger than in ♂, last two minute, white with blue edges, admarginal bars all present, buff, not interrupted.

Underside nearly as in ♂, all the median bars of forewing with a dirty white patch at outer side, discal patch $C-SC^2$ of hindwing and the postdiscal interstitial spots of forewing larger than in ♂; tails triangular, upper one 5 to 8 mm., second 2 to 4 mm. long.

Length of forewing: ♂ 40–45 mm.

” ” ♀ 47–51 mm.

Clasper similar to that of *Ch. tiridates*, slenderer; penis with a tooth 1 mm. before the end and a short tooth-like ridge farther back, nearly as in *Ch. bipunctatus*; penis-funnel very little narrower towards end, being of nearly the same width near base as near extremity, the tip is curved down as in other *Charaxes*, but this vertical portion is broad, not pointed, being rounded triangular.

Hab. Sierra Leone to the Congo, rare. In the Tring Museum 9 ♂♂, 4 ♀♀ from Sierra Leone and the Gold Coast, one of them caught at Sierra Leone in October 1898 by Capt. Stevens. In the Berlin Museum from Victoria, Cameroons; in Dr. Standinger's collection a ♂ and a ♀ from Borombi, Cameroons, and a ♂ from the Gold Coast.

In one of the ♂♂ from Sierra Leone there are vestiges of blue discal spots R^3-M^2 on the upperside of the forewing.

Dr. Standinger's ♀ from the Cameroons has the postdiscal spots of the upperside of the forewing much paler than they are in our Sierra Leone examples, and the blue band of the hindwing is wider.

*d*⁶. Abdomen white.

41. *Charaxes pythodorus*.

Charaxes pythodorus Hewitson, *Ent. Mo. Mag.* X. p. 57 (1873) (Angola); Auriv., *Konigl. Sr. Ak. Handl.* XXXI. 5. p. 239. n. 39 (1899).

Charaxes pythodorus (1) Hewitson, *Ex. Butt.* V. *Charaxes*. t. 5. f. 18. 19. ♂ (1874).

♂. Head, pronotum and anterior part of mesonotum mummy brown, upperside of palpi and meso-metanotum black, the last with white hairs; abdomen creamy white; *underside* of palpi and abdomen buff, sides of sterna and legs clay colour, femora blackish above.

♂. *Wings above* black, slightly blue in side-light.—Forewing: basal half of costal margin chocolate brown, especially the veins, if denuded; discal spots SC^5-R^3 placed nearly as in ♀ of *imperialis*, spots SC^5-R^2 about 8 mm. from cell, small, not so broad as the space between them, spot R^2-R^3 close to cell, spot R^3-M^1 5 to 7 mm. from base of M^1 , these spots white, edged and shaded with pale blue, white spots M^1-SM^2 6 to 7 mm. from base of M^1 , a little larger than

spot R^3-M^1 , placed into a very large pale blue patch which is 12 to 16 mm. broad at internal margin and of which the oblique proximal edge is 9 mm. from base of wing at SM^2 ; a postdiscal series of pale blue spots, curving costad in front, the spots increasing in size behind, rounded, diameter of spot M^1-M^2 1 to 3 mm., spots M^2-SM^2 merged together with the blue area; no admarginal dots, fringe white except at ends of veins.—Hindwing: a large pale blue area from near base to beyond bent of R^3 , shaded with white proximally, becoming almost pure white towards abdominal margin; base for about 4 mm. and postdisco-marginal area black, the latter 10 to 14 mm. broad at SC^2 , 4 to 7 mm. at M^2 ; a series of small, submarginal spots, white, edged and shaded with blue, anterior spot the largest, diameter about $1\frac{1}{2}$ mm.; admarginal, pale blue, markings very thin, partly obsolete.

Underside uniformly buffish clay colour, black bars very thin, except bars M^2-SM^2 of forewing, whitish edges of bars extremely thin.—Forewing: no basal cell-spot, cell-bar 3 separated into two portions, sometimes into three or four dots, cell-bar 4 nearer bar 3 than apex of cell, strongly convex in middle distally, concave near ends; bar D partly obsolete, very thin; submedian and median bars M^2-SM^2 heavy, joined together behind, forming a heavy half-ring, which is sometimes entirely filled up with black, submedian bar M^1-M^2 3 mm. from base of M^2 ; median bars R^3-M^2 concave distally, bar R^3-M^1 7 mm. from base of M^1 , bar M^1-M^2 3 mm. more proximal, median bar R^2-R^3 1 to 2 mm. from cell, mostly straight, less often concave distally, bar R^1-R^2 short, convex distally, 10 mm. from cell, bar SC^5-R^1 about 2 to $2\frac{1}{2}$ mm. more distal, of the same shape, on the outer side of median bars there are seldom vestiges of white spots; discal bars M^2-SM^2 represented by a black halfmoon, the other discal bars indicated as blackish clouds forming an indistinct, nearly continuous, band; postdiscal bars M^2-SM^2 represented by a large black patch, concave distally, with ill-defined, faint, grey scaling at proximal and distal sides, the other postdiscal bars mostly represented by small, ill-defined, brown or black spots; internal margin black near angle, bluish grey in and beyond middle.—Hindwing: basal costal bar short, sometimes absent; no subbasal costal bar; submedian costal bar more proximal than the other submedian bars, curved or straight; median bars all more or less obviously convex distally, the series more irregular than in *Ch. imperialis*, bars SC^2-R^1 and R^1-R^3 more proximal than the other bars; discal and postdiscal bars represented by brown, more or less distinctly halfmoon-shaped, clouds, the postdiscal ones better defined than the discal ones; bluish white submarginal dots obvious, last two contiguous with blue and black dots; anal angle less produced than in *Ch. imperialis*, tails reduced to short, blunt, teeth.

♀. Like ♂, wings broader. Forewing: outer margin less concave; postdiscal spots more purplish blue, upper discal ones more extended white; on the *underside* the white discal spots at outer side of the median bars present, but small.

Length of forewing: ♂ ♀, 37—45 mm.

Clasper similar to that of *Ch. imperialis*: penis without subapical tooth, armed only with a minute tooth situated about $3\frac{1}{2}$ mm. from the apex; penis-funnel as in *imperialis*, but the tip of the hook more acute.

Hab. From Angola to British East Africa; not occurring north of Congo, or in S. Africa.

Ch. pythodorus is a sexually monomorphic southern ally of *Ch. imperialis*; in the development of the markings of the forewing above *pythodorus* agrees

better with the ♀ than with the ♂ of *imperialis*, inasmuch as in both sexes of *pythodorus* and in the ♀ of *imperialis*, the discal interstitial spots are present.

The differences between the two geographical races of *pythodorus* are not conspicuous, but seem to be pretty constant.

a. *Ch. pythodorus pythodorus*.

Charaxes pythodorus Hewitson, *Ent. Mo. Mag.* X. p. 57 (1873) (Angola); Kirby, *Cat. Diurn. Lep.* p. 748. n. 77 (1877); Dewitz, *Nor. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371. (1887) (Mukenge); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 239. n. 39 (1899) (Mukenge; Angola; L. Mero).
Charaxes pithodorus (!), Hewitson, *Er. Butt.* V. *Charaxes*. t. 5. f. 18. 19. ♂ (1874); Butl., *Proc. Zool. Soc. Lond.* p. 649. n. 22 (1893) (Rhodesia, L. Mweru, June); id., *Journ. Linn. Soc. Lond.* XXV. p. 375. n. 69 (1896) (L. Mweru; Angola); Lanz, *Iris* IX. p. 142 (1896) (Plateau north of Tanganyika).

♂. *Wings, upperside*.—Forewing: pale blue postdiscal spots M² (SM⁴) completely merged together with the blue discal patch, blue scaling of discal spots R³—M² more or less extended distad, generally reaching the postdiscal spots.—Hindwing: black outer area about 10 mm. broad at R¹.

Underside: submedian costal bar more or less straight, situated in front of subbasal bar C—SC².

♀. See above. The blue scaling on upperside of forewing between veins R³ and M² much less extended.

Hab. Angola (*type*, Brit. Mus.): ♂ ♀ from Pungo Andougo (Homeyer) in the Berlin Museum; Lake Mweru (Brit. Mus.); plateau north of Lake Tanganyika (this form, or *nesaea*?). In the Tring Museum 2 ♂ ♂ labelled "Congo" and Lukolele, Congo.

b. *Ch. pythodorus nesaea*.

Charaxes nesaea Grose-Smith, *Ann. Mag. N. H.* (6). III. p. 132 (1889) (Mombasa).

Charaxes pythodorus, Aurivillius, *l.c.* (1899) (Germ. E. Afr.).

♂. *Wings above*.—Forewing: postdiscal spot M²—(SM¹) more or less separate from blue discal patch, sometimes also spot (SM¹)—SM² isolated, spots R³—M² not connected with the respective discal spots by pale blue scaling.—Hindwing: black outer area about 14 mm. broad at R¹.

Underside: subbasal costal bar curved distad, more distal than in the preceding form, standing between subbasal and submedian bars C—SC².

♀. Unknown.

Hab. British E. Africa: Mombasa (coll. Grose-Smith). In the Tring Museum 2 ♂ ♂ from Rau, Nandi country, caught on the 13th and 14th of March, 1898 (Dr. Ansoerge); Germ. E. Afr.

d^b. Hindwing below with a rufous chestnut band across middle.

42. *Charaxes hadrianus* (Nov. Zool. VII. t. 7. f. 4. ♂).

Charaxes hadrianus Ward, *Ent. Mo. Mag.* VIII. p. 120 (1871) (Cameroons); Kirby, *Cat. Diurn. Lep.* p. 748. n. 68 (1877) (Cameroons); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 381. n. 88 (1896) (Gaboon; *cit. partim falsa*); Auriv., *Kongl. Vet. Akad. Handl.* XXXI. 5. p. 240. n. 48 (1899) (Kamerum; Gaboon; Ogowé; Bangasso, Upp. Uhanghi).

Charaxes duc Staudinger, *Exot. Tagf.* p. 170 (1886) (Gaboon).

Charaxes gabonica Crowley, *Tr. Ent. Soc. Lond.* p. 553. t. 17. f. 3 (1890) (Gaboon); *id.*, *Proc. Ent. Soc. Lond.* p. 38 (1890) (*gabonica* = *hadrianus*).

♂ ♀. Palpi *above* black; head, pronotum, and anterior part of mesonotum rufous chestnut, meso-metonotum and base of, in ♀ the whole upperside of, abdomen drab brown, rest of abdomen and *underside* white.

♂. *Wings, upperside*.—Forewing: base as far as origin of M^1 rufous chestnut, this area horizontally cut off or sinuate in cell, distally separated by black, proximally ill-defined, more or less heavy, median bars from a broad creamy white discal band; the band about 18 mm. wide at internal margin, 11 mm. distant from base, patch M^2 — SM^2 of nearly the same length, bordered grey proximally and distally, patch M^1 — M^2 much smaller, obliquely concave distally, patch R^3 — M^1 isolated, the wing being black, about 2 to 3 mm. from base of M^1 , spot R^2 — R^3 again smaller, discal patches SC^5 — R^2 8 mm. from cell; a series of five or six postdiscal spots, also white, spot SC^4 — SC^5 absent or minute; a white admarginal spot upon (SM^1), sinuate distally; fringe white at ends of internervular folds.—Hindwing: creamy white, base blackish for about 4 mm., this colour gradually shading into grey distally; a series of black submarginal bars, well separated from one another, mostly somewhat concave proximally, shaded at edges with olive grey, bars SC^2 — R^3 sometimes rather feebly marked; a thin, black admarginal line, continuous or subinterrupted at internervular folds; abdominal fold slightly shaded with grey, more white, less cream colour than disc.

Underside: chalky white, slightly glossy, bars very thin.—Forewing: cell-bar 3 absent, bar 2 very oblique, partly obliterated, bar 4 nearer M^2 than M^1 , angled in middle, the angle pointing distad; submedian bars M^1 —(SM^1) one in front of the other, 2 mm. from base of M^2 ; median bar M^2 —(SM^1) 2 mm. distant from the submedian bar; median bar M^1 — M^2 1 or 2 mm. more distal, concave distally, $\frac{1}{2}$ to 1 mm. distal of base of M^1 , bar R^3 — M^1 oblique, 4 or 5 mm. from base of M^1 , bar R^2 — R^3 close to bar D, parallel to it, distance about $\frac{1}{2}$ mm., bar SC^5 — R^1 7 mm. from cell, oblique, bar R^1 — R^2 very little more distal, sometimes convex distally; discal bars SC^5 — M^2 more or less vestigial, especially the posterior ones, bar M^2 — SM^2 fused with the postdiscal bar to a large black patch, which includes some white scales near proximal edge as vestige of the white discal border of the discal bar; the other postdiscal bars not represented, but the postdiscal interspaces occupied by white spots as above; outer two-thirds of wing more glossy than base and internal marginal area.—Hindwing: basal and subbasal costal bars absent, subbasal bars C—M vestigial or absent; submedian costal bar about $1\frac{1}{3}$ mm. from PC, much more basal than the submedian bars C—M; median bars more proximal than in the allied species, the series almost straight, but interrupted at veins, bar R^2 — R^3 very close to bar D, bar R^3 — M^1 absent, bar M^1 — M^2 midway between M^1 and M^2 , no median bars M^2 — SM^2 ; discal bars concave distally, except the last ones, very much heavier than the other bars, forming a continuous series which extends in a straight line from costal to abdominal margin, crossing M^1 about 1 mm. from base and C 15 mm. from end of these veins, the bars edged white distally, contiguous with a postdiscal, rufous chestnut band of 2 mm. width, the band sharply defined, irregularly concave between veins distally, except between M^2 and SM^2 , with vestiges of black postdiscal bars at outer edge, especially behind; black submarginal dots R^1 — SM^2 minute, dot SC^2 — R^1 sometimes vestigial; admarginal interstitial spots, primrose yellow, extremely pale, spots C— R^1 sometimes ochraceous; a

black marginal line, very thin, obliterated between veins, more heavily marked on tails ; upper tail about 5 mm., second 2 mm. long, both blunt.

♀. Like ♂, larger. *Wings above.*—Forewing : creamy white patches larger than in ♂, discal patches R^2 — M^2 not separated, patch M^1 — M^2 11 mm. long in middle, postdiscal spot M^1 — M^2 about $3\frac{1}{2}$ mm. in diameter, touching discal patch ; besides admarginal spot M^2 — SM^2 there is another, minute, admarginal spot between M^1 and M^2 , or a vestige of it.—Hindwing : black basal area a little more extended ; black submarginal bars heavier than in ♂ ; proximal of them there are olive grey patches representing the postdiscal bars, patch (SM^1)— SM^2 black, as are sometimes the upper patches ; white submarginal spots more or less isolated by these postdiscal clouds from the white discal area : abdominal fold shaded with black dispersed scales.

Underside : apical half of forewing somewhat shaded with brown scaling ; discal line of bars of hindwing about 4 mm. from base of M^1 , submarginal black dots larger than in ♂.

Length of forewing : ♂, 44—46 mm.

” ” ” ♀, 48—51 mm.

Clasper in outline similar to that of *tiridates* and *allics*, but the apical hook not concave on the upper surface, the carina which runs from the tip of the hook to the inner surface of the clasper not sharply raised ; penis armed with a small dorsal tooth 1 mm. before end, a short, low, carina, ending in a small tooth about 3 mm. before end, one or two more small teeth between carina and subapical tooth ; penis-funnel more gradually curved than in *tiridates*, more triangular than in *imperialis*, apical hook very short, vein D^3 of hindwing reaching M^1 about midway between M^1 and M^2 in both sexes.

Hab. Niger to Congo. In the Tring Museum 2 ♂♂, 2 ♀♀, from Warri, Niger Coast Protectorate, April (Dr. F. Roth) ; Gaboon ; Kassai country.

The ♂ from the Kassai country (figured on Pl. VII.) has the admarginal spots C — SC^3 of the underside of the hindwing ochraceous. In the ♀ form Warri the submarginal bars of the hindwing above are large, continuous, the postdiscal black patches C — R^1 are also well developed and fused with the submarginal bars, isolating two white submarginal spots, no white admarginal interspace C — SC^2 .

Ch. hadrianus, although standing isolated in the present group of species, is nevertheless more closely allied to *Ch. pythodorus*, *ameliae*, and *imperialis* than to any other *Charaxes*. In the pattern of the upperside of the forewing it agrees well with the *females* of *Ch. imperialis* and *ameliae*, and with both sexes of *pythodorus* ; the nearly all white hindwing seems at first sight to be a very peculiar character, but is only the outcome of an exaggerated development of white scaling which has already begun in *Ch. pythodorus*. The proximal movement of the discal luniform bars of the *underside* of the hindwing is peculiar to this species ; the other bars of the underside, except the large postdiscal patch M^2 — SM^2 of the forewing, are more or less feebly marked, agreeing in position fairly well with the species with which we here associate *hadrianus*. The uniform appearance of the underside, however, is glaringly interrupted by the band across the hindwing. This band, which is so very prominent on the white ground, must surely have some biological meaning ; the resemblance of *hadrianus* to *Pieridae* is not enhanced by it.

f⁴. Nearly all the bars of underside tawny.

e⁵. Abdominal area of hindwing below without tawny longitudinal lines.

e⁶. ♂, forewing with two series of postdiscal and admarginal orange spots, which are merged together posteriorly at base to a broad band; ♀, postdiscal spots of forewing above orange.

43. *Charaxes azota* (Nov. Zool. V. t. 5. f. 3. ♂).

Philognoma azota Hewitson, *Ent. Mo. Mag.* XIV. p. 82 ♀ (1877) (Del. Bay, ♀).

Charaxes azota, id., *l.c.* XIV. p. 181, ♂ (1878) (Nyassaland); Trimen & Bowk., *S. Afr. Butt.* III. p. 387. n. 384 (1889) (Del. Bay, Nyassa); Monteiro, *Delagoa Bay t. 1. f. 1* (1891); Trim., *Proc. Zool. Soc. Lond.* p. 40. n. 61 (1894) (Manica); Butl., *Ann. Mag. N. H.* (6). XV. p. 248 (1895) (Del. Bay); id., *Journ. Linn. Soc. Lond.* XXV. p. 365. n. 36 (1896) (Del. Bay); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 235 n. 23 (1899) (Del. Bay, Manicaland).

Charaxes calliclea Smith, *Ann. Mag. N. H.* (6). III. p. 130 (1899) (Mombasa).

Charaxes nyasana Butler, *ibid.* (6). XV. p. 249 (1895) (Nyassaland); id., *Proc. Zool. Soc. Lond.* p. 253. n. 11 (1895) (Zomba).

Charaxes azota local form: *Charaxes calliclea*, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 365 sub n. 36 (1896) (Mombasa).

Charaxes azota local form: *Charaxes nyasana*, Butler *l.c.*

Charaxes azota var. (ab.?) *nyasana*, Aurivillius, *l.c.* (1899) (Nyassaland).

Charaxes azota var. (ab.?) *calliclea*, id., *l.c.* (1899) (Mombasa).

♂. *Upperside* of palpi, head, prothorax and anterior part of tegulae bright cinnamon rufous, rest of upperside olive black, abdomen often somewhat chocolate, four dots on head white, more or less obvious; *underside* of palpi, and the sterna dark vinaceous cinnamon, legs and abdomen paler, second segment of palpi with a thin pale line at eye, its tip laterally and the greater part of segment 3 black.

Wings above velvety black, faintly purplish, both with a wide cadmium orange postdisco-marginal band.—Forewing: costal edge cinnamon rufous, this colour extending into cell, often occupying the basal half of the cell, the very edge of the wing generally black, at least in middle, base behind cell up to M² often faintly shaded with cinnamon rufous, vein M often of the same colour up to R³; the orange band includes a series of black submarginal spots, variable in size and number, the upper ones always confluent, hence the band divided into an admarginal and a postdiscal portion, the veins traversing the band more or less heavily black, except the posterior ones, the size of the orange patches or spots into which the band is thus separated very variable in size; extreme outer margin always black.—Hindwing: band variable in width individually, narrowest in front as a rule, measuring 8 to 12 mm. at SC², its proximal edge slightly irregular, crossing R 1½ to 4 mm. distally of M¹; black submarginal dots M²—SM² (with white centres) nearly always present, the submarginal dots SC²—M² sometimes more or less obviously vestigial, especially dot SC²—R¹ often conspicuous.

Underside vinaceous cinnamon rufous, with a whitish vinaceous gloss, bars, postdisco-marginal area of forewing, and postdiscal and admarginal interspaces of hindwing not glossy; postdisco-marginal area of both wings somewhat orange: basal to median bars cinnamon rufous, except bars M²—SM² of forewing, which are black.—Forewing: cell-bars heavy, bar 3 often separated into two dots, bar 4 slightly oblique, slightly angled in middle in many specimens, narrowed behind, basal cell-spot absent; submedian bars M¹—SM² continuous with each other and cell-bar 4; median bars M¹—SM² also continuous, but bar R³—M¹ more distal, bar R²—R³ fused with bar D as a rule, bars SC⁴—R² angle-shaped, fused together to a

short zigzag band, sometimes thin, occasionally overshadowed with glossy vinaceous scales; discal bars rather ill-defined, slightly luniform, standing in a continuous series, which at (SM¹) is about 10 mm. distant from edge of wing and at R¹ only 8 mm., the series running apicad from M¹ to R¹, and costad from R¹ to SC⁴; postdiscal interspaces tawny ochraceous at discal bars; postdiscal bars M²—SM² developed to a black patch of variable size; glossy pinkish white submarginal spots SC³—SC⁵ conspicuous, the others vestigial.—Hindwing: basal costal bar not very distinct, anteriorly often joined to costal submedian bar; no basal to submedian bars on abdominal fold; submedian bars continuous, forming an oblique, slightly curved line which crosses M just before M²; median bars also continuous, forming a straight, or nearly straight, line from costal margin to SM², twice as heavy costally as behind as a rule, crossing M midway between M¹ and M²; discal bars luniform, proximally very ill-defined, dark cinnamon rufous, with orange or yellow buff lunules or spots at outside; postdiscal bars more or less tawny orange, their outer edges well defined, incurved; submarginal pinkish white dots C—SM² all present, but very small, the last two or three joined to black submarginal dots; upper tail 2 to 3 mm., second a mere tooth.

♀. Body *above* as in ♂, but abdomen sepia or broccoli brown; *underside* paler than in ♂.

Wings, above.—Forewing; costal margin paler than in ♂; a discal band from R³ to internal margin, white, anteriorly mostly shaded with yellow, 25 mm. broad at internal margin, patches R³—M² triangularly concave outwardly, patch R³—M¹ about half (or less than half) the size of patch M¹—M², discal spot R²—R³ close to cell seldom conspicuous, mostly vestigial, often absent, always small, discal spots SC⁵—R² yellowish, seldom almost white; 4 to 5 mm. long, mostly slightly concave proximally, often preceded by one or two streaks; the basal area up to the discal markings brownish black, but part of cell of the same colour as costal margin of wing; discal black bars represented by a curved black band from SC⁴ to R³, followed by two arrow-head- or angle-shaped spots, bar M²—(SM¹) often vestigial; upon these bars follows a series of postdiscal, orange, somewhat ovate, spots, the upper four measuring about 5 mm. in length, spot R³—M¹ larger, the spots generally separate, seldom fused together, mostly somewhat ochreous near black discal bars; postdisco-submarginal black band widened behind and in front, very seldom separated into spots; an admarginal orange band of about 2½ mm. width, consisting of halfmoons, which are sometimes separated from one another; extreme edge of wing black, fringe white between veins.—Hindwing: middle of wing from costal to abdominal margin occupied by a broad white band, of which the inner edge crosses SC at base of R¹, shaded outwardly, especially in front, with orange; this white area bordered by a black postdisco-submarginal band, which is parallel to outer margin, but is generally narrower costally and abdominally than in middle, measuring between R³ and M¹ about 8 mm., distally dentate upon veins; the band includes two or three white submarginal dots posteriorly, and is followed by an orange admarginal band about 4 mm. in width between R³ and M¹; edge of wing black; base black.

Underside paler than in ♂, vinaceous tawny up to median bars, discal interspaces of fore- and hindwing and postdiscal ones of hindwing ochre yellow, the discal ones of forewing becoming creamy white towards internal margin.—Forewing: bars as in ♂, but submedian and median bars M¹—SM² closer together, often fused, postdiscal interspaces partly ochreous; black patch near

internal angle very variable in extent, sometimes altogether replaced by tawny.—
Hindwing : discal luniform bars generally clearly defined, but sometimes partly obliterated ; basal costal bar indistinct ; upper tail 3 to 6 mm. long, rounded at tip, second 1 to 2½ mm.

Length of forewing : ♂, 38—42 mm.

” ” ♀, 42—50 mm.

Clasper slender, the ridge which forms the inner edge of the hook continued on to the inner surface of the clasper, here situated much closer to the ventral than the dorsal edge of the clasper ; penis curved before end, with the trace of a dorsal tooth at the bent, without other armature ; penis-funnel not triangular, as broad at apex nearly as at base, slightly narrowed before apex, apical edge turned downwards, rounded, not narrowed to a point ; the processes of the tenth tergite are short.

Vein D³ of hindwing in both sexes about midway between M¹ and M². PC of ♂ and especially of ♀ with a short spur.

Hab. Delagoa Bay to Nyassaland and Brit. E. Africa. In the Tring Museum from : Delagoa Bay, 16 ♂♂, 4 ♀♀ ; Lauderdale, Brit. Cent. Afr., 1 ♂ ; Chipaika Estate, near Bandawe, Brit. C. Afr., 3 ♂♂, 1 ♀ (Watkinson) ; Zomba, Brit. C. Afr., December, 1895, 1 ♂, 1 ♀ (Dr. Percy Rendall) ; Parumbira, Lake Nyassa, German E. Afr., 8. xi. 93 and 9. xi. 93, 3 ♂♂ (Dr. Ansoerge) ; German E. Afr., 1 ♀ ; Taveta, Brit. E. Afr., July 1891, 1 ♂. Mombasa, Brit. E. Afr., in coll. Grose-Smith ; Dar-es-Salaam in Berlin Mus. and coll. Staudinger ; Majuji, N. Useguia, end of May, in Berl. Mus. A long series from Zomba in H. J. Adams's collection.

A ♀ in the Tring Museum without exact locality, said to be from German East Africa, has the black postdisco-submarginal bands of both wings very much reduced ; on forewing there is, instead of a continuous band, a series of minute dots from SC⁵ to M², followed by two somewhat larger spots, while on the hindwing the band is not interrupted, but its postdiscal portion is replaced by orange, so that the black band is only 3 mm. wide between veins ; the band stops costally at SC².

We do not agree with Dr. Butler that the specimens from the various localities are subspecifically separable. The characters adduced by Dr. Butler as separating the individuals from Nyassaland from those from Delagoa Bay do not hold good ; Dr. Butler, when describing *nyasana* in 1895, and again when writing the note on *azota*, *nyasana* and *calliclea* in his revision of the genus in 1896, had only one ♂ from Delagoa Bay for comparison. Our series of 16 *males* from that locality proves that the number and size of the black markings within the orange bands of the upperside are individually very variable ; in some of the specimens the series of spots reaches on the forewing down to SM², while in others it stops at R³, while others again are intermediate.

When Mr. Grose-Smith described *calliclea* as a distinct species, he had overlooked that the insect had already received the name of *azota* by Hewitson.

f^o. ♂, Forewing above without postdiscal orange spots, upper admarginal dots very small or absent ; ♀, postdiscal spots of forewing above white or creamy white.

44. *Charaxes protoclea*.

Charaxes protoclea Feisthamel, *Ann. Soc. Ent. Fr.* p. 260. n. 12 (1850) (Casamance) ; Butl., *Proc. Zool. Soc. Lond.* p. 627. n. 13 (1865) ; Dewitz, *Nov. Act. Leop. Car. Ac. Naturf.* L. 4. p. 371 (1887) (Mukenge, April) ; Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 126. n. 71 (1889)

(Kassai); id., *l.c.* p. 146. n. 78 (1889) (Congo); Schaus & Clements, *Sierra Leone Lepid.* p. 8 (1893); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 60 (1893) (Adeli); Butl., *Ann. Mag. N. H.* (6). XV. p. 248 (1895); id., *Journ. Linn. Soc. Lond.* XXV. p. 364. n. 35 (1896) (Camerouns; O. Calabar; S. Leone); Auriv., *Kongl. Sv. Ak. Handl.* XXXI. 5. p. 234. n. 22 (1899) (Senegambia to Angola).

♀. *Charaxes aeson* Herrich-Schaeffer, *Aussereur. Schmett., Tagf.* f. 9. 10 (1850) (Afr. occ.).

♂. *Nymphalis protoclea* Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 14 (1850); Kirby, *Cat. Diurn. Lep.* p. 268. n. 13 (1871).

♀. *Nymphalis aeson*, id., *l.c.* p. 272. n. 51 (1871) (Gold Coast).

♂. *Upperside* of head, prothorax, anterior part of tegulae deep chestnut; meso-metanotum olive black, abdomen seal brown, nearly black; palpi black; *underside* drab colour, with a chocolate tint.

Wings above velvety black, with a bluish tint in side-light.—Forewing: admarginal interspaces from M^1 or M^2 to internal margin cadmium orange, the spots sometimes fused together, forming a short band of from 2 to 5 mm. width behind, in some specimens there are tiny admarginal dots also between veins SC^3 and M^1 ; fringe white between veins.—Hindwing with a broad postdisco-admarginal, cadmium orange band, narrowing in front, 4 to 9 mm. broad at SC^2 , 10 to 12 mm. at M^1 ; a series of black submarginal dots, the dots all present, or some or nearly all absent, dot $C-SC^3$ often rather large and fused with the black area; extreme edge of wing black, fringe white between veins.

Underside darker than in *azota*, varying from vinaceous walnut brown to olivaceous mummy brown; bar nearly as in *azota*, but on forewing, cell-bar 3 divided into two dots, cell-bar 4 strongly curved distad in middle, median bar M^1-M^2 more distal than bar M^3 (SM^1), on hindwing, discal and postdiscal bars rather more obvious, the glossy submarginal area reduced in width, almost separated into large halfmoons, white submarginal dots heavier; upper tail $1\frac{1}{2}$ to 2 mm., second a mere tooth.

♀. Body as in ♂, but *underside* paler, clay colour, palpi more creamy buff.

Wings above black, slightly bluish in side-light; discal band across both wings as in *azota* ♀, but milky white, bluish at edges, somewhat narrower.—Forewing: costal margin slightly chocolate towards base; discal band 11 to 13 mm. broad at SM^2 , 5 mm. from cell behind M^1 , spot R^2-R^3 vestigial, seldom absent, spots SC^5-R^2 separated, the second about twice as long as broad; postdiscal spots SC^4-M^2 as in *azota* ♀, but smaller, especially the upper four, spots R^3-M^2 separated from discal band by black arched or angled bars, bar M^1-M^2 often abbreviated, bar $M^2-(SM^1)$ sometimes vestigial, the postdiscal spots milky white or slightly tinged with yellow; admarginal spots orange, variable in size individually, gradually decreasing in size costad, spots SC^3-M^1 generally mere dots, spots M^2-SM^2 mostly confluent to one elongate spot, but sometimes well separated and minute.—Hindwing: discal band narrowing behind, the abdominal fold not being white; its outer edge almost straight, slightly convex; postdisco-submarginal black band as in *azota* ♀, but broader, especially its first partition broader than in that species, measuring between R^3 and M^1 from 9 to 12 mm.; 2 to 5 white submarginal dots in this band; orange admarginal band on the whole less regularly convex between veins proximally than in *azota*.

Underside dark fawn colour from base to median series of bars, approaching vinaceous cinnamon; discal and postdiscal spots and band of forewing and disco-postdiscal band of hindwing as above, but creamy white, the postdiscal spots more

cream colour, less white, sometimes all these pale interspaces pale maize yellow.—Forewing : bars as in ♂, discal bars Inniform or angle-shaped, rather thin, postdiscal ones represented by patches or spots, often minute, externally more or less obviously bordered with whitish, glossy, scaling, patches M^2 — SM^2 black, fused together, large, with bluish white scaling at outside, which more or less resembles the letter M, the others russet tawny, but patch M^1 — M^2 often partly black, marginal area russet tawny, tawny behind.—Hindwing : as in *azota* ♀, median bars M^2 — SM^2 rather heavier, postdiscal ones also heavier as a rule, the glossy submarginal area sharper defined in most individuals, the admarginal tawny or orange tawny, bands bordered proximally by creamy buff bars ; upper tail 3 to 6 mm., second a blunt tooth.

Length of forewing : ♂, 38—45 mm.

” ” ♀, 47—52 mm.

Sexual armature as in *Ch. azota*, but penis with several extremely small, teeth dorsally.

Vein D^3 of hindwing joining M in ♂ at point of origin of M^2 , in ♀ between M^1 and M^2 .

Hab. Senegambia to Angola and Upper Congo. In the Tring Museum, 21 ♂♂, 7 ♀♀ from : Sierra Leone ; Gold Coast ; Congo : Lukolele, Bopoto, Kassai ; Aruwimi forest, two, three, and ten days' march from Fort Beni, May 6. 7. 14. 1899 (Dr. Ansonge).

The orange band of the forewing above is in the males from the Congo basin on the whole more reduced than in the individuals from the northern parts of West Africa (Sierra Leone and Gold Coast) ; the Congo individuals have also the *underside* slightly darker. In one of our specimens from Lukolele, Congo, there are on the upperside of the forewing distinct traces of the orange postdiscal spots SC^1 — R^2 of *Ch. azota*, and also some orange scales about 2 mm. from the admarginal band between M^1 and SM^2 ; this individual forms a kind of connecting link between *Ch. azota* and *protoclea* ; the postdiscal orange spot (SM^1)— SM^2 of the forewing above is vestigial in many ♂♂ ; in an individual from Victoria, Cameroons, in the Berlin Museum it is rather conspicuous.

*f*⁶. Abdominal area of hindwing below with tawny longitudinal lines.

45. *Charaxes cynthia*.

Charaxes cynthia Butler, *Proc. Zool. Soc. Lond.* p. 626. n. 12. t. 36. f. 3. ♂ (1865) (Ashanti) ; id., *l.c.* p. 570. n. 25 (1887) (Rio del Rey) ; Smith, *ibid.* p. 472. n. 85 (1890) (Aruwimi) ; Auriv., *Ent. Tidsk.* XII. p. 215. n. 138 (1891) (Cameroons) ; id., *l.c.* XIV. p. 310. n. 188 (1894) (Cameroons) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 366. n. 40 (1896) (O. Calabar ; Rio del Rey ; Cameroons ; Angola) ; Auriv., *Kongl. Sr. Vet. Ak. Handl.* XXXI. 5. p. 235. n. 21 (1899) (Ashanti ; O. Calabar ; Cameroons ; Kuilu ; Aruwimi ; Njam Njam ; Angola).

Nymphalis cynthia, Kirby, *Cat. Diurn. Lep.* p. 268. n. 11 (1871) ; Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. p. 28 (1879) (Angola).

♀. *Charaxes lysianassa* Westwood, *Thes. Oxon.* p. 181. t. 34. f. 3. 4 (1874) (Ashanti).

♂ Body *above* somewhat brighter than in *lucretius*, but darker than in *boueti*, white dots on pronotum as in *boueti* ; *below* as in *boueti*, breast slightly darker laterally.

Wings, upperside, similar to that of *lucretius*, but without the blue gloss.—Forewing : cell and base behind cell brighter than in *lucretius*, deep orange rufous ;

bar D and heavy median bar R^2-R^3 fused together, with orange rufous spots SC^4-5-R^3 at outside, these spots fused together, seldom separated, spot R^2-R^3 smaller than the other two, sometimes minute; black submedial-discal area nearly the same as in *lucretius*, narrower and better defined behind, with two discal spots SC^5-R^2 of variable size, sometimes also with traces of thin discal lunules R^3-M^1 ; postdiscal band of bright orange rufous spots more oblique than in *lucretius*, patches R^3-M^2 generally with a black incision or a black line anteriorly, representing the discal bars, admarginal spots smaller than in *lucretius*, mostly somewhat separate from edge of wing, patch M^2-SM^2 externally nearly always incised upon (SM^1), and proximally produced into a short line upon (SM^1), as in *boueti*.—Hindwing: disco-postdiscal band somewhat widened basad in and beyond cell to near base of M^2 ; admarginal rufous orange band as in *boueti*, the black postdisco-submarginal band distally somewhat produced at veins and internervular folds, hence the admarginal interspaces not regularly convex between veins as in *lucretius*; marginal black line thin as in *boueti*; of the submarginal blue and white dots only the last two are marked.

Underside vinaceous hazel, median and discal interspaces of forewing and submarginal area of hindwing with a rather slight whitish pink gloss in side-light, bars bright cinnamon rufous, heavy.—Forewing: basal third of costal margin white; cell and discal interspaces somewhat clayish, basal cell-spot present, cell-bar 4 strongly curved twice, its upper end pointing distad; submedian and median bars M^2-M^2 very heavy, patch-like, generally joined together at (SM^1), black, some bluish white scaling between them, submedian bar M^1-M^2 proximal of M^1 , median bar M^1-M^2 5 mm. from base of M^1 , both bars black behind, no submedian bar R^3-M^1 , median bar R^3-M^1 sometimes feeble, slightly curved distad, 1 or $1\frac{1}{2}$ mm. more distal than median bar M^1-M^2 , bar R^2-R^3 touching bar D behind, median bars SC^5-R^2 in the usual place, each angle- or halfmoon-shaped; discal bars luniform, obscurely marked, edged externally with pale greenish buff lunules, bars R^3-M^2 separated from median bars; outside median bars a pale pinkish buff patch, from M^2 to internal margin, much widened behind; postdiscal bars represented by spots, of which spots M^1-SM^2 are black, spots M^2-SM^2 large, fused together, with three more or less separate bluish white spots outwardly, the other postdiscal spots indistinct, also with some pale submarginal scaling distally, which is more distinct between SC^4 and SC^5 ; posterior orange admarginal spots rather obvious.—Hindwing: costal margin of wing edged with orange rufous, basal costal bar long, curving distad, subbasal bars C—M continuous, but bar M—(SM^1) more basal and almost longitudinal; submedian line of bars slightly irregular, crossing M just at the base of M^2 ; median bars continuous, forming an almost straight line which is outwardly bordered with a thin black line which crosses M proximally of base of M^1 ; discal interspaces occupied by continuous silvery white band, $1\frac{1}{2}$ to $2\frac{1}{2}$ mm. broad, variable in width individually and geographically, extending to abdominal margin, bordered distally by the discal bars, of which the upper ones are arched; all discal bars bordered outwardly with pale olivaceous buff; postdiscal bars chestnut tawny, arched, generally rather dilated basad between veins, ill-defined proximally, better so distally; white submarginal dots vestigial, with pinkish buff transverse spots at outside, last two dots more obvious, with the black submarginal dots present; anal admarginal spot olive buff; edge of wing a little less sharply dentate than in *lucretius*; tails triangular, pointed, upper one 4 to 5 mm. long, second 3 to 4 mm.

♀. *Body above* somewhat darker than in ♂ abdomen *beneath* without the black lines of *lucretius*.

Wings, upperside, as in ♂, but basal area of forewing much less bright and less extended, cinnamon rufous, the disco-postdiscal band buff yellow, distally tinged with orange rufous, seldom shaded with brown, broader than in ♂, measuring 9 mm. in width at SM², the discal portions of the patches R³—M² larger than in ♂; median spots SC³—R³ pale ochraceous rufous; admarginal spot as in ♂, but spots SC³—M² larger than in ♂, about equal in size.—*Hindwing*: disco-postdiscal band buff yellow, wider than in ♂, 8 mm. broad at R¹, edged externally with rufous orange; admarginal orange rufous band more even in width than in ♂, being comparatively narrower in middle than in the other sex, its proximal edge evenly convex between veins down to R³; band of both wings sometimes suffused with brown.

Underside: paler than in ♂, the interspaces between the heavy bars more glossy; discal and postdiscal interspaces of forewing and large halfmoons at outside of discal bars of hindwing as well as cell of forewing buff, more or less pale, discal band of hindwing silvery as in ♂, but wider, or pale yellowish buff like discal patches M¹—SM² of forewing; tails longer than in ♂, the upper one slightly spatulate, 8 to 9 mm. long, the second pointed, 6 to 7 mm. long.

Length of forewing: ♂, 38—42 mm.

” ” ♀, 45—49 mm.

Hook of clasper irregularly denticulate at upper edge, rather strongly curved, acute; penis curved before the end, no armature except a feeble ridge about 2½ mm. from the tip which bears some small teeth, the ridge is oblique, turning proximally towards the left side; penis-funnel somewhat narrower towards the end, apex rounded when seen from above, apical margin turned downward to form a rather heavy hook.

Vein D³ of hindwing in both sexes before M¹, as in *boueti*.

Hab. West African Forest Region, from Sierra Leone to Angola and Uuyoro; Fernando Po, coll. Grose-Smith. In the Tring Museum 15 ♂♂, 8 ♀♀ from: Sierra Leone; Gold Coast; Warri, Niger Coast Protectorate, February and April (Dr. Roth); Congo; Lukolele, Bopoto, Kassai; two and three days' march from Ft. Beni, Aruwimi Forest, May 6. 7. 1899 (Dr. Ansorge); Fajao, Uuyoro, 15. vii. 97 (Dr. Ansorge). This is a close ally of *Ch. boueti*, of which it may be called the West African representative, though the two insects cannot very well be united to one species, the differences between them being too great.

Charaxes cynthia has apparently developed into two subspecies, the one inhabiting the northern parts of West Africa from Sierra Leone to the Niger, the other ranging from Cameroons to Uuyoro. We have not seen sufficient material of the *female* sex, and therefore do not give a name to the Congolese form, but point out the following differences between the *males*:

Sierra Leone to Niger: Postdiscal band of forewing *above* posteriorly obviously paler than in front; discal band of hindwing ferruginous buff yellow, edged with orange rufous. White discal band of *underside* of hindwing 2 to 4 mm. broad before SC².

Cameroons, Congo, to Uuyoro: Band of forewing *above* not distinctly paler behind than in front; band of hindwing orange rufous, little paler proximally; orange rufous admarginal band of hindwing *above* and *below* wider than in *cynthia cynthia*. On *underside* the white discal band is on the whole narrower than in the northern race.

46. *Charaxes boueti* (Nov. Zool. VI. t. 8. f. 2. ♂).

Charaxes boueti Feisthamel, *Ann. Soc. Ent. Fr.* (2). VIII. p. 261 (1850) (Gambia).

♂. *Body, above*, clayish tawny ochraceous, head, pronotum, anterior portion of mesonotum, and palpi ochraceous; *underside* creamy buff, palpi and middle of prosternum almost white; palpi with a black dorso-lateral line; anterior tibiae and oblique stripes on breast underneath legs ochraceous.

Wings, above, orpiment orange, marked with black, base slightly less bright than disc.—Forewing: no bars in cell; bar D thin; median bars heavy, patch-like, bars R^3 — SM^2 gradually a little more proximal; bar R^2 — R^3 close to apex of cell, touching posteriorly bar D, sometimes absent, bars SC^5 — R^2 in the ordinary place, more or less triangular; discal bars SC^4 — M^2 present, mostly rather heavy, bar M^2 —(SM^1) sometimes vestigial, bar SC^4 — SC^5 triangular, produced basad, bar R^2 — R^3 extending proximad to median bar R^1 — R^2 , with which it is often fused, bars R^3 — M^2 smaller, generally luniform, sometimes linear, spot M^1 — M^2 seldom absent; postdiscal and submarginal bars fused together with the marginal line to a postdisco-marginal band which is proximally incised upon or at veins, and includes the orpiment orange admarginal spots, which anteriorly decrease in size, spots M^2 — SM^2 fused to one patch, band 6 mm. wide before (SM^1), about 4 mm. upon fold R^1 — R^2 ; veins SC^4 — R^3 between discal and postdiscal black markings often all black.—Hindwing: median bars C — R^3 vestigial, sometimes rather clearly marked, often with pale scaling at outside; a postdisco-submarginal band of variable width, narrowest behind, composed of patches which are either separated or fused together, patch SC^2 — R^1 the largest, $3\frac{1}{2}$ to 5 mm. wide, somewhat prolonged distad at SC^2 , as the other patches also often are, but in a lesser degree, the band of about the same width as the orpiment orange admarginal band, the difference in width not considerable, sometimes patches R^2 — SM^2 obsolete; submarginal blue and white dots M^2 — SM^2 present; anal admarginal interspace olive buff; marginal black line thin, not interrupted.

Underside ochraceous buff, slightly variable in the depth of the tint, the bars thin, tawny ochraceous, except posterior bars of submedian, median, and postdiscal series, which are black.—Forewing: basal third of costal edge silvery white; cell-bar 3 separated into dots, no basal cell-spot; median bar R^3 — M^1 about 4 mm. from base of M^1 , interspace between median and submedian bars M^2 — SM^2 mostly bluish; discal bars halfmoon-shaped, the series almost parallel to outer margin, but anteriorly curving costad, the upper bars developed to ill-defined triangular patches; postdiscal series parallel to the discal one, interspace between veins about 2 to 3 mm, bars ill-defined, posterior ones patch-like and triangular, with whitish blue or bluish white scaling at outside; internal margin more or less extended bluish white.—Hindwing: basal costal bar short, median bars continuous, forming a straight or nearly straight line which crosses M just proximally of base of M^1 , often more or less broadly bordered with silvery white, as sometimes is the submedian series proximally; discal bars luniform, feebly marked, rather close to median series, ochraceous, bar R^3 — M^2 only 1 or 2 mm. from base of M^1 , postdiscal bars often better defined and more tawny, but sometimes very obscure; buffish white submarginal dots more or less vestigial, last two heavier and with blue-black dots at outside; admarginal interspaces pale orange ochraceous or ochre yellow, anal one olive buff; edge of wing dentate, tails acute, upper one 3 to 4 mm., second 5 mm. long.

♀. *Body above* darker, especially abdomen more brown than in ♂; abdomen *below* more or less tawny.

Wings above much less bright orange than in ♂, black markings much larger than in ♂, basal area (up to median bars) varying from pale ochraceous rufous to cinnamon rufous, discal and postdiscal interspaces of forewing and discal band of hindwing yellow buff.—Forewing: discal interstitial patch M^2-SM^2 6 mm. broad at M^2 , the patches decreasing in size anteriorly, the upper three somewhat elongate, patches SC^5-R^2 separate from the others, as discal bar R^2-R^3 extends so much basad as to touch median bar R^1-R^2 , the discal bars all dilated basad, except bar $M^2-(SM^1)$, which is thin; postdiscal interspaces more or less rounded, edged with ochraceous rufous, especially broadly so at veins, the spots becoming slightly smaller towards costal margin; admarginal spots pale ochraceous rufous.—Hindwing: median bars $C-M$ more or less vestigial, discal band heavily bordered distally with ochraceous rufous, this border becoming wider behind, its proximal edge corresponding to the discal bars, between C and R^1 , where the ochraceous rufous colour is very restricted the discal bars are sometimes vestigial, standing within the pale band; postdisco-submarginal black band continuous, less narrowing behind than in ♂, externally dentate at veins; white submarginal dots M^2-SM^2 present, dots R^3-M^2 sometimes vestigial; admarginal interspaces less bright orange than in ♂.

Underside either as in ♂ or more fawn colour, especially the median and submarginal interspaces, discal and postdiscal interspaces paler than in ♂, bars on the whole better defined; tails longer, very slender, a little less pointed than in ♂; cell-bar 3 of forewing sometimes not interrupted.

Length of forewing: ♂, 34—38 mm.

” ” ♀, 40—42 mm.

Vein D^3 of hindwing in both sexes proximal of base of M^1 as in *cynthia*.

Penis with some extremely small dorsal teeth (or traces of them) at the subapical bent, and two larger sinistro-lateral teeth about 3 mm. from end; penis-funnel and clasper similar to those of *cynthia*, hook of clasper strongly chitinized, long, sharply pointed.

Hab. Tropical East Africa and Senegambia.

We can distinguish two geographical forms.

a. *Ch. boueti lasti*.

Charaxes lasti Smith, *Ann. Mag. N. H.* (6). 111. p. 131 (1889) (Mombasa); id. & Kirby, *Rhop. Erot. I. Charaxes*, p. 8, t. 4, f. 4, 5. (1890); Trim., *Proc. Zool. Soc. Lond.* p. 39, n. 60, t. 5, f. 6. ♀ (1894) (Manica); Butl., *ibid.* p. 720, n. 12 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV, p. 367, n. 42 (1896) (Mombasa; Zomba).

Charaxes macclouni Butler, *Proc. Zool. Soc. Lond.* p. 252, n. 9, t. 15, f. 1. ♂ (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV, p. 367, n. 41 (1896) (Zomba).

Charaxes lasti Grose-Smith var. *flavescens* Lanz, *Iris* IX, p. 142 (1896) (Parumbira; Tanganyika, October).

Charaxes boueti var. *macclouni*, Aurivillius, *Kongl. Sv. Ak. Handl.* XXXI, 5, p. 235, n. 20 (1899) (Manica; Zomba; Parumbira; Tanganyika).

Charaxes boueti var. *lasti*, id., *l.c.* (Mombasa).

♂♀. *Wings, above*.—Forewing: median bar R^2-R^3 present, in ♀ fused with bar D , in ♂ touching this bar behind.

Underside.—Forewing: submedian and median bars M^1-M^2 tawny, not black.

Hab. Tropical East Africa : Manicaland ; Nyassaland ; Tanganyika ; Usambara (coll. Staudinger) ; Mpwapwa (coll. Staudinger) ; Mombasa (coll. Grose-Smith). In the Tring Museum 3 ♂♂, 2 ♀♀ from : Zomba, December 1895 (Dr. Percy Rendall) ; Bandawe, Nyassaland, April 15th, 1899 (F. Watkinson) ; German E. Africa, without precise locality.

b. Ch. boueti boueti (Nov. Zool. VI. t. 8. f. 2. ♂, type).

Charaxes boueti Feisthamel, *l.c.* ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 367. n. 43 (1896) (Gambia) ; Auriv., *l.c.* t. 5. f. 2. ♂ (1899) (Casamanca).

♂. *Wings, above.*—Forewing : median bar R²—R³ very thin, completely fused with bar D ; discal bars SC¹—R³ all heavy and fused together, the orange patch included between them and the median bars SC¹—R² smaller than in *lasti*.—Hindwing : black postdisco-submarginal band not interrupted from C—M², narrower than in the specimens of *lasti* with a not interrupted band.

Underside.—Forewing : submedian, median, and postdiscal bars M¹—M² black ; median bar R²—R³ touching bar D posteriorly.—Hindwing : submedian and median lines of bars more blackish than in *lasti*, the interspace between them darker ; nervular lines and bars on abdominal fold more obvious than in *lasti*.

Hab. Senegambia : Casamanca 1 ♂ (*type*) in coll. Oberthür ; 2 specimens in the British Museum from the Hinterland of Sierra Leone.

Mons. Chas. Oberthür has kindly sent us a drawing of the *type* of *boueti*, which is reproduced on Plate VIII. of Vol. VI.

The differences between *boueti* and *lasti* may be purely individual, considering that *lasti* is a very variable insect. We cannot find any constant difference between the specimens from Nyassaland and those from the coast region of German and British East Africa.

ℓ³. Cell-bar 3 of forewing below heavier than bar 4, narrowed in front, submedian and median bars M¹—SM² of forewing very heavy.

47. *Charaxes lucretius*.

Papilio Eques Achirus lucretius Cramer, *Pap. Exot.* I. p. 129. t. 82. f. E. F (1777) (Guinea) ; Fabr., *Spec. Ins.* II. p. 22. n. 91 (1781) (Guinea) ; id., *Mant. Ins.* II. p. 12. n. 107 (1787) ; Jabl. & Herbst, *Naturs. Schmett.* IV. p. 73. n. 158. t. 66. f. 1. 2 (1790) ; Gmelin, *Syst. Nat.* I. 5. p. 2244. n. 340 (1790) (Guinea).

Papilio Nymphalis lucretius, Fabricius, *Ent. Syst.* III. 1. p. 84. n. 261 (1793) (Guinea).

Eriboea lucretia (!), Hübnér, *Verz. bek. Schmett.* p. 47. n. 425 (1816-27).

Nymphalis lucretius, Godart, *Ent. Méth.* IX. p. 352. n. 7 (1823) (Guinea) ; Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 6 (1850) (Guinea) ; Kirby, *Cat. Diurn. Lep.* p. 268. n. 10 (1871) (Guinea) ; Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 8 (1879) (Chinchoxo).

Charaxes lucretius, Doubleday, *List. Spec. Lep. Ins. Brit. Mus.* I. 111 (1844) ; Butl., *Proc. Zool. Soc. Lond.* p. 626. n. 11 (1865) (Guinea) ; id., *Cat. Diurn. Lep. descr. by Fabr.* p. 53. n. 12 (1869) (Asbanti) ; Staud., *Exot. Tagf.* p. 169. t. 58 (1886) (Gaboos, Fernando Po, Gold Coast) ; Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371 (1887) (Mukenge, Nov.) ; Butl., *Proc. Zool. Soc. Lond.* p. 60. n. 15 (1888) (Monbuttu, Equat. Afr.) ; Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 66 (1889) (Kassai) ; Congo) ; id., *l.c.* p. 146. n. 76 (1889) (Gabon) ; Mab., *Ann. Soc. Ent. Fr.* (6). X. p. 22 (1890) (Assinie) ; Godm. & Salv., in Jameson, *Story Rear Columu* p. 440. n. 80 (1890) (Aruwimi) ; Möschl., *Abh. Senk. Ges.* XV. p. 61. n. 99 (1890) (Aburi) ; Auriv., *Ent. Tidsskr.* XII. p. 215. n. 138 (1891) (Cameroons) ; Schaus & Clements, *Sierra Leone Lepid.* p. 8 (1893) ; Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 187. n. 52 (1893) (Adeli, Togo) ; Auriv., *l.c.* XV. p. 310. n. 189 (1894) (Cameroons ; I.—VI. ; IX.—XI.) ; Butl.,

Journ. Linn. Soc. Lond. XXV. p. 366. n. 39 (1896) (S. Leone ; Isubu ; Camerouns ; O. Calabar ; Fernando Po ; Accra ; Ashanti ; Angola) ; Anriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 19 (1899) (Sierra Leone to Angola and the Aruwimi R.).

♂. Head, pronotum and anterior portion of mesonotum as well as *upperside* of palpi dark cinnamon rufous, rest of meso- and metanotum brownish black, abdomen chestnut, dots on head and pronotum obsolete or absent ; *underside* ochraceous tawny, breast more hazel, palpi with a black dorso-lateral stripe which is thinly edged with white beneath ; middle and hinder femora black above, with a sprinkling of whitish scales.

Wings, above, with a strong purplish blue sheen all over in side-light, black, cell of forewing cinnamon rufous, this colour extending more distad at costal margin and occupying also base of wing beyond cell where it shades into the black colour ; discal and admarginal marking rufous or pigment orange, the discal band of the hindwing anteriorly somewhat paler.—Forewing : cell-bar 4 more or less heavily marked, bars 2 and 3 mostly vestigial ; bar D broad, generally partly separated from the black discal area by some rufous or pigment orange spots, never quite isolated ; a postdiscal band of spots, straight, almost parallel to margin, about 4 mm. broad at SM², decreasing in width costad, the upper spots rounded, spot SC⁴—SC⁵ mostly very small, sometimes absent ; admarginal spots halfmoon-shaped, the series complete, the upper ones smaller, spots M²—SM² not fused together.—Hindwing : disco-postdiscal band of nearly even width, proximally sinuate at SC², crossing R¹ at right angles, 4 to 7 mm. broad at this vein, its inner edge crossing M at point of origin of M¹ ; admarginal interspaces developed to a complete, uninterrupted band of halfmoons, about 4 mm. wide between veins ; marginal black line barely ½ mm. broad, not interrupted ; submarginal dots M²—SM² minute, bluish white, the others absent as a rule, but in one of our examples (from the Congo) all the dots vestigial ; edge of wing strongly dentate.

Underside : reddish chestnut, forewing somewhat paler than hindwing shading from M¹ to internal margin into orange buff ; basal to median bars black, clearly marked, edged with bluish white.—Forewing : no basal cell-spot, cell-bars 2 and 3 rather heavy, but short, bar 4 thinner, not, or slightly, curved or angled, about at right angles to veins ; bar D thin, anteriorly dilated distad ; submedian bars M¹—(SM¹) very heavy, patch-like, bar M¹—M² distal of base of M¹, no submedian bar R³—M¹ ; median bars M¹—SM² heavy, widely separate from submedian bars, median bar R³—M¹ thin, more distal than bar M¹—M², 7 to 9 mm. from base of M¹, oblique, inclining basal costally, like bar M¹—M², bar R²—R³ 1 or 1½ mm. from cell, thin, bars SC³—R² in the usual place, each one angle-shaped, the points of the angles directed distad ; discal bars SC⁴—(SM¹) vestigial, represented by chestnut spots which are arranged in an oblique series that anteriorly slightly curves costad and posteriorly touches median bar M²—(SM¹) ; postdiscal bars SC⁴—M¹ represented by similar spots, which are luniform and open basad, postdiscal bar M¹—M² heavier, more or less black, bars M²—SM² represented by a large black patch that extends to internal margin, veins M², (SM¹) and SM² with pale blue scaling within and at that patch, postdiscal and admarginal interspaces rather paler than the rest of the wing, especially behind.—Hindwing : black bars thin ; basal costal bar short, distant from PC, no subbasal bar C—SC², no basal cell-spot, submedian series extending to (SM¹), much broken, cell-bar 4 reaching M at point of origin of M² ; median series also broken, bar C—SC² arched, bars M²—SM² generally not distinct, reaching abdominal margin 4 or 5 mm. from tip of SM³ ; discal and postdiscal bars

heavy, somewhat uniform, vinaceous brick red, the series first parallel, then converging, slightly curving distad between R^1 and R^3 , the discal series faintly bordered with white proximally; submarginal pinkish white dots SC^2 — SM^2 present, the last two with the black submarginal dots at outside; admarginal interspaces smaller than above, dark ferruginous, thinly edged with pinkish white at both sides; marginal line as above; tails acute, short, upper one 3 to 4, second 2 to 3 mm. long.

♀. *Body above* as in ♂, but abdomen blackish brown; *underside* paler than in ♂, abdomen with two black stripes, interrupted at edges of segments.

Wings above blackish brown, with little blue gloss.—Forewing: basal three-fifths of costal margin and part of cell dark cinnamon rufous, cell-bars and bar D less conspicuous than in ♂, owing to the posterior half of cell (or more) being suffused with blackish brown; median bars SC^5 — R^2 vestigial in some specimens; postdiscal band of patches as in ♂, but colour varying from creamy white to yellowish buff, posteriorly somewhat broader than in ♂, spot SC^4 — SC^5 vestigial or well-marked; admarginal spots smaller than in ♂, often obsolete, the last two often cream colour, the others cinnamon rufous.—Hindwing: disco-postdiscal band varying from creamy white to buff yellow, straight, extending to abdominal margin, of even width from SC^2 , or R^1 , to SM^2 , wider at C, 5 to 9 mm. broad at R^2 , often triangularly sinuate proximally upon R^1 , often incised distally upon veins, edges of band somewhat ochraceous rufous in the more yellow banded specimens; admarginal spots as large as in ♂, but sometimes smaller and clearly separated from one another, ochraceous orange, paler proximally, or very pale buff; submarginal dots M^2 — SM^2 as in ♂.

Underside: mars brown or fawn colour, postdiscal band of forewing and disco-postdiscal one of hindwing wider than above, less sharply defined, buff or buffish white.—Forewing: median bars SC^5 — R^2 more angle-shaped than in ♂, tawny marginal band comparatively more obvious.—Hindwing: discal series of bars very inconspicuous, partly obliterated; postdiscal bars as heavy as or heavier than in ♂, submarginal area shaded with pinkish white, white submarginal dots indistinct; tawny ochraceous admarginal halfmoons somewhat thinner than in ♂, their pinkish white proximal borders broad; tails as in ♂, but longer.

Length of forewing: ♂, 37—41 mm.

” ” ♀, 40—46 mm.

Clasper not so sharply pointed as in *cynthia*; penis-funnel more triangular, slenderer, apex thickened underneath to a tubercle which is compressed and produced proximally into a tooth; penis thin, with a dorsal tooth about 1 mm. before end, and traces of teeth about 3 mm. from apex.

Hab. West African Forest Region from Sierra Leone to Angola and Uganda. In the Tring Museum, 25 ♂♂, 8 ♀♀ from: Sierra Leone; Gold Coast; Cameroons; Congo: Lukolele, Bopoto, Kassai; Pt. Alice, Uganda, February 1, 1897 (Dr. Ansoerge).

In the unique specimen (♂) from Pt. Alice the band of the forewing is nearly equal in width, narrower than in most individuals from other places; the bluish white submarginal dots R^3 — SM^2 of the upperside of the hindwing are conspicuous, and there is a trace of a further dot before R^3 .

The *females* from the Congo basin and Cameroons have a very pale band.

The specimens from Fernando Po seem to be slightly different from those from other localities. In the single ♂ examined (in coll. Hewitson) the orange parts of the upperside are darker, being more shaded with purple blue, the admarginal

spots are smaller; the black marginal line of the hindwing is heavier between the veins, the veins within the orange band of the hindwing above are blackish. The ♀♀ have the band of the upperside yellowish; the admarginal halfmoons of the hindwing are contiguous, shaded with tawny; admarginal line heavier between veins; the tawny resp. blackish discal and postdiscal bars of both wings below rather sharply defined, the discal ones especially more strongly marked than in the individuals from other places, the discal tawny ochraceous halfmoon-shaped bars of the hindwing separated by pale buff spots from the chocolate tawny postdiscal band of bars, which shows obvious vestiges of black scaling at the discal edge.

*f*². Admarginal spots of hindwing large, halfmoon-shaped, several mm. distant from edge of wing.

48. *Charaxes odysseus* (Nov. Zool. V. t. 7. f. 4. ♀).

♀. *Charaxes odysseus* Staudinger, *Iris* V. p. 260 (1892) (St. Thomé); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 366. n. 38 (1896) (St. Thomas); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 18 (1899) (St. Thomé).

♂. Unknown.

♀. *Body above*: thorax olive bistre, palpi, head and pronotum more raw umber colour, abdomen mummy brown; dots on head and pronotum obliterated.

Underside drab grey, palpi, middle of pro- and mesosternum, and abdomen more creamy white.

Wings, upperside: blackish mummy brown, slightly purplish, basal area of forewing Vandyke brown, of hindwing Prout's brown, abdominal fold shading into wood brown.—Forewing: a large patch in apex of cell purplish black, submedian bar M^1-M^2 vestigial, broad, median bars traceable, represented by large purplish black patches which are slightly deeper black than the rest of the mediano-marginal area; a triangular patch at base of cellule R^3-M^1 , a short streak behind R^2 about 4 mm. from cell, a double patch $SC^{45}-R^2$ about 2 mm. from upper angle of cell, cream colour; two discal spots SC^5-R^2 almost white, and a band of postdiscal spots white, this band extends from SC^9 to internal margin, widening posteriorly, the spots all separate; four admarginal patches R^3-SM^2 creamy white.—Hindwing: a creamy white discal band as prolongation of the band of the forewing, narrowing behind, divided by the brown veins into patches, shaded with brown behind M^2 , its inner edge broken at R^3 ; an admarginal series of creamy white halfmoons from C to M^2 several mm. from edge of wing; submarginal dots, spots M^2-SM^2 very small bluish white, no other submarginal spots.

Underside: pale clay colour, markings not sharply defined.—Forewing; no basal cell-spot, cell-bar 2 oblique, thin, cell-bar 3 thicker behind, less oblique, cell-bar 4 thin, slightly undulate, nearly at right angles to veins; bar D very thin; submedian and median bars M^2-SM^2 fused to a large brownish black patch, submedian bar M^1-M^2 distal of base of M^2 , heavy, like the median bar M^1-M^2 , no submedian bar R^3-M^1 ; median bar R^3-M^1 rather obscure, 8 mm. from base of M^1 , bar R^2-R^3 close to cell, indistinct, bars SC^4-R^2 in their usual place (at one-third the way from cell to apex of wing), also not clearly marked; discal bars SC^4-R^3 marked as slight clouds, bars R^3-M^2 scarcely traceable as proximal borders of the creamy white patches; series of postdiscal patches as above, wider behind, less clearly defined; postdiscal bars R^3-SM^2 represented by purplish black patches, submedian

patch very large; admarginal spots as above, larger.—Hindwing: basal costal bar faint as are all the basal to median bars; no submedian bars (SM^1)— SM^3 ; submedian and median series rather far apart, the median series nearly continuous down to R^3 , broken at this vein; discal bars clay colour, continuous, fused at veins with the similarly coloured postdiscal bars, which stand close to them; discal interspaces totally occupied by a creamy white band which is widest (8 mm.) at costal margin, measures 3 mm. before R^3 , and $1\frac{1}{2}$ mm. behind R^3 , and widens out again at abdominal margin; postdiscal interspaces small pale buff; no admarginal spots and admarginal bars marked, but creamy white submarginal spots as above, anal submarginal dots larger than above, both tails broad, triangular, blunt, upper one 3 mm., second $1\frac{2}{3}$ mm. long.

Length of forewing: ♀, 39 mm.

R^3 of hindwing M at base of M^1 .

Hab. Island of St. Thomé, 1 ♀ in coll. Staudinger.

This is a very remarkable species; its greatest peculiarity is the position of the large admarginal halfmoons of the hindwing.

d. Cell-bars of forewing below straight, with heavy white borders, or bar 4 all white, discal bars of forewing straight.

*e*¹. Basal area of upperside of wings milky white like body.

49. *Charaxes lactetinctus*.

♂. *Charaxes lactetinctus* Karsch, *Ent. Nachr.* XVIII. p. 113. n. 1 (1892); id., *Berl. Ent. Zeitschr.* XXXVIII. p. 190. n. 53. t. 5. f. 3 (1893) (Adeli, Sept. October); id., *l.c. Sitz.-Ber.* p. 19 (1894); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 365. n. 37 (1896) (Adeli); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. p. 234. n. 17 (1899) (Togo).

♂ ♀. *Upperside* of palpi, head, pronotum and tegulae tawny, rest of upperside milky white; antennae black; *underside* of palpi pale tawny, with a black lateral line which is bordered pale yellow ventrally; sternae and legs russet, femora more black, abdomen in ♀ white, tawny in middle, with an interrupted black streak at each side.

♂. *Wings above*: basal half of forewing and basal two-thirds of hindwing bluish white.—Forewing: tawny, the white area not reaching SC^1 , externally oblique; bar D heavy, triangular, median bars R^3 — SM^2 forming large continuous patches, black, median bars SC^{45} — R^2 also black, heavy, elongate, contiguous; discal and postdiscal patch-like bars less deep black, discal ones SC^3 — R^3 forming a large triangular patch pointing backwards, patch R^2 — R^3 more proximal, subrectangular, contiguous with the black median patch R^3 — M^1 ; postdiscal brownish black patches merged together to a band which widens posteriorly, and is produced towards the margin of the wing at the veins; the orange tawny discal interspaces SC^1 —(SM^1) smaller than the postdiscal brownish black patches, separated from each other at the veins, the upper ones more or less rounded, the series almost parallel to outer margin; admarginal, tawny, spots about as large as the discal ones, convex proximally, upper ones not clearly separated from one another.—Hindwing: white area posteriorly wider than in front, its outer edge crossing R^3 proximally of bent; discosubmarginal bars enlarged and merged together to a very broad black band, which includes the whitish violet blue submarginal dots R^1 — SM^2 close to its outer edge; postdiscal interspaces C — R^1 tawny about 2 mm. wide before SC^2 ; orange tawny

admarginal interspaces transverse, upper one largest, middle ones about $1\frac{2}{3}$ mm. wide, interspaces R^3-M^2 strongly constricted between veins, anal one olive buff; admarginal line black.

Underside chestnut.—Forewing: postdiscal and marginal interstitial bands tawny, the former about 3 mm. wide at (SM^1), narrowing costad, the latter wider in middle than behind: cell-bars transverse, bar 2 and 3 with rather thin white borders, bar 4 all white, the black scaling being obliterated; bar D thin; submedian bars $M^1-(SM^1)$ heavy, the upper one with a heavy white proximal border, this border just behind point of origin of M^1 , submedian bar (SM^1)— SM^2 more or less marked, as is also the subbasal bar; median bars R^3-SM^2 subcontinuous, the series crossing M^1 about 8 mm. from the base of that vein, no median bar R^2-R^3 , black median bars SC^3-R^2 also obliterated, but their white distal borders developed to a triangular patch; postdiscal bars R^3-SM^2 more or less black, patch-like, bordered distally by a bluish grey scaling which forms a narrow band that extends to near costal margin, but becomes anteriorly more olive and less distinct.—Hindwing: all the basal postdiscal bars absent, except discal bar (SM^1)— SM^2 which is black, but the position of the median, discal and postdiscal series of bars is indicated in consequence of the difference in tint of the discal, postdiscal and submarginal interspaces, the discal and submarginal interspaces forming two somewhat greyish brown bands, while the postdiscal interspaces are merged together to a chocolate band; this latter band is of about 4 mm. width in middle, crosses SC^3 about 10 mm. from end of vein and thence runs towards anal angle; submarginal black bars R^3-SM^2 represented by black dots which are bordered bluish white proximally, similar bluish white, but less distinct, lunules also between C and R^3 ; admarginal interspaces as above, rather wider (except upper one) less bright orange tawny, interspaces R^3-M^2 yellowish in middle: marginal line blackish brown; abdominal area tawny; tails triangular, second longer than first, length 5 resp. 7 mm.

♀. Like ♂, wings somewhat broader, tawny orange postdiscal interstices of forewing *above* wider; on the *underside* the median bars R^3-M^2 of forewing closer to cell than to postdiscal bars (in ♂ the reverse is the case), on hindwing the chocolate postdiscal band more proximal, proximally bordered by a distinct grey line, discal interspaces C— R^3 orange.

Length of forewing: ♂, ♀, 40—45 mm.

Hab. Togoland: Adeli, found in September and October, not rare according to the discoverer. A ♀ in the British Museum found between Scarceis and the Niger.

*f*¹. Basal areas of wings above not white.

*g*². Costal median bar of hindwing below absent.

*i*³. Dentition of outer margin of hindwing not prominent, no tail M^1 .

*g*⁴. Forewing above: cell with a black subapical patch, post-costal median and discal interspaces more or less orange.

50. *Charaxes druceanus*.

Charaxes druceanus Butler, *Cist. Ent.* I. p. 4. n. 1 (1869) (O. Calabar); id., *Lep. Ex.* p. 26. t. 10. f. 4. ♂ (1870) (O. Calabar); Spiller, *Entom.* XV. p. 8 (1882) (Natal); Westw., *Thes. Oxon.* p. 182. t. 34. f. 6. ♂ (1874) (Old Calabar, Natal, Zambesi); Staud., *Exot. Tagf.* p. 169 (1886) (Natal); Trim. & Bowker, *S. Afr. Butt.* I. p. 329. n. 108 (1887) (Natal; Transvaal; Zambesi);

Angola); Butl., *Proc. Zool. Soc. Lond.* p. 252. n. 7 (1895) (Zomba, ♀); id., *l.c.* p. 720. n. 6 (1895) (Zomba); id., *l.c.* p. 110. n. 7 (1896) (Nyassa, IV.; Nyika); id., *l.c.* p. 822. n. 10 (1896) (Lumpi R., Lower Nyika, XI.); id., *Journ. Linn. Soc. Lond.* XXV. p. 351. n. 3. (1896) ("O. Calabar" and "Gaboon" *loc. err.?*; Zomba; Orange R.; Kaffraria; Nyika; Nyassaland); Dist., *Ann. Mag. N. H.* (7). I. p. 51 (1898) (Limpopo R.); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 11 (1899) ("O. Calabar"; Gaboon; Congo; Angola; Natal; Transvaal; Nyassaland; Zambesi).

Charaxes cinadon Hewitson, *Ent. Mo. Mag.* VI. p. 177 (1870) (Natal).

Nymphalis druceanus, Kirby, *Cat. Diurn. Lep.* p. 268. n. 12 (1871) ("O. Calabar"; Natal); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 28 (1879) (N. Angola).

♂ ♀. Body as in *pollux*, but upperside varying from chestnut brown to orange tawny.

♂. *Wings above* similar to those of *pollux*, basal area varying from chestnut brown to ochraceous tawny, band better defined than in *pollux*, its width variable, $3\frac{1}{2}$ to $5\frac{1}{2}$ mm. at SM² of forewing.—Forewing: cell-bar 3 sometimes vestigial, more or less obviously showing through from the underside, cell-bar 4 transverse, about 2 mm. broad, not reaching M, but posterior part often vestigial; submedian bars M¹—SM² absent or faintly vestigial; median bar M¹—SM² mostly absent, sometimes marked as a heavy line, bars R³—M² developed to patches which extend often to cell, situated as in *Ch. phoebus*, median bar R²—R³ fused with bar D as in *pollux*, median bars SC⁵—R² heavy, sometimes extended basad to cell, bar SC⁴—SC⁵ also present, elongate; discal bars SC⁴—R² or SC⁴—R¹ fused to a heavy triangular patch, bar R¹—R² if isolated very small, bar R²—R³ often absent, but if present always situated close to median bars SC⁵—R², in the darkest individuals it is joined to these bars as well as to discal bars SC⁴—R²; ochraceous rufous or tawny admarginal spots large, well defined, rounded proximally.—Hindwing: tawny ochraceous or orange tawny discal band narrowing behind, with a darker tawny outer border; black postdisco-submarginal band almost straight proximally, its inner edge crossing R just at or a little beyond bent of that vein; pale blue submarginal dots R³—SM² present, last one largest; admarginal spots ochraceous rufous or tawny, slightly separated at veins, or contiguous, spot SC²—R¹ two to four times as wide as the black marginal line, anal one thin, more or less olive.

Underside reddish chestnut or ferruginous; bars nearly as in *pollux*, somewhat wider, especially their silvery white borders.—Forewing: median bar R²—R³ seldom separated by a small, short, white, spot from bar D, median bars SC⁴—R² partly obsolete, their white borders fused to a band of even width, about 3 mm. broad, which is joined to the white disco-postdiscal band, median bars R³—M² very heavy, the upper 5 mm. from base of M¹; discal bars SC⁴—R¹ olive, obsolescent, white band sharply defined, 4 to 5 mm. broad at (SM¹), 3 mm. at fold R³—M¹, 4 mm. between R² and R³, of about even width ($2\frac{1}{3}$ mm.) from R² to SC⁴, pinkish posteriorly, separated from the series of black postdiscal spots by a chestnut or orange rufous band, which becomes paler behind, where it is as broad as the white band; postdiscal bars patch-like, gradually decreasing in size towards costa, patches R³—M² almost touching one another, all bordered white or bluish white distally, the white border of double patch M²—SM² resembling the number 3, borders R²—M² generally also of a similar shape, the black patches being distally slightly sinuate in middle, upper patches more or less transverse, proximal edge of patches SC⁴—M¹ sometimes also with thin but obvious white border; admarginal interspaces larger than above, but more ill-defined.—Hindwing: black bars not heavier than their white borders, basal costal bar linear; upper two black submedian

bars absent, their white borders fused to a band of 2 to 3 mm. width which is continuous with the cell-bar 2; upper three (or more) black median bars absent, their white borders fused with the white discal band, but partly separated from it by tawny chestnut spots, white borders of cell-bar 4, bar D and median bar R^2-R^3 fused together at R^2 , submedian bar $M^2-(SM^1)$ nearly longitudinal, joining line (SM^1), median bar $M^2-(SM^1)$ more distal than in *pollux*, continuous with median bars (SM^1)— SM^3 which join together the ends of the abdominal lines; white discal band inclusive of white borders of median bars 6 mm. wide at C, strongly narrowing behind; of the discal series of black bars only those beyond M^2 are present, forming a nearly straight line at the outer edge of the white band; the interspace between the white submedian and mediano-discal bands 4 to 5 mm. broad at SC^2 , rather regular in shape down to M; postdiscal interspaces fused to a band of the same colour as the basal area of the wing; postdiscal black bars varying in width, more or less uniform, heavily bordered with white distally, position of bars nearly as in *pollux*, bars R^1-R^3 being more distal than the others, bar M^1-M^2 closer to submarginal one than in *pollux*; submarginal bars transverse, the upper one or two luniform, concave distally, bars M^1-SM^2 also somewhat arched, concave proximally, the last fused with postdiscal ones to a ring (or double ring), filled up with olive (which is often the case with the ovate interspace between postdiscal and submarginal bars M^1-M^2) and including two white and blue dots, but no white scaling at postdiscal bar, submarginal bars C— M^2 heavily bordered white proximally, thinly so distally, bar M^1-M^2 generally with a blue dot in white scaling; submarginal interspaces less bright in colour than the postdiscal band, more or less cinnamon rufous; admarginal interspaces rectangular, upper one halfmoon-shaped, contiguous, ferruginous tawny, the posterior ones pale ochraceous; black marginal line thinly but obviously edged with white; edge of wing much less sharply dentate than in ordinary *pollux*, agreeing in this respect with *phoebus*, tooth M^1 very short, rounded, tail R^3 4 to $5\frac{1}{2}$ mm. long, second 5 to 6 mm.

♀. Like ♂, larger, discal band of upperside paler, sometimes buff yellow, tails very long, slender, but less pointed than in *pollux* and allies, tail R^3 9 to 10 mm., tail M^2 9 to 10 mm. long.

Length of forewing: ♂, 35—40 mm.

” ” ♀, 42—48 mm.

Penis thick, a large subapical tooth with several small ones close behind.

Hab. “Old Calabar,” “Gaboon,” according to Butler; Congo, Angola, Nyassaland, Zambesi, Natal. In the Tring Museum 3 ♂♂, 3 ♀♀ from: South of Congo, Congo Free State; Zomba, December 1895 (Dr. Percy Rendall); Lauderdale; Karkloop, Natal, April.

The Natal specimens have the black colour of the upperside on the whole rather more extended than the individuals from Angola and the Congo, and the discal interstitial band is paler orange. Whether the species really extends to Old Calabar, whence the type is said to be from, is more than doubtful.

*h*¹. Forewing above: no cell patch, median, discal and postdiscal bars all merged together to a large black area, which is narrow behind.

51. *Charaxes eudoxus* (Nov. Zool. VI. t. 8. f. 3. ♂).

Papilio Eques Achivus eudoxus Drury, *Illustr. Ex. Ins.* III. p. 44 and *Index.* t. 33. f. 1. 4 (1782) (S. Leone).

♂. Body similar to that of *druceanus*.

Wings above: basal area chestnut.—Forewing: chestnut colour of base extending to vein M^1 , shading into the blackish brown colour of the disc; bar D anteriorly partly free, but median and discal bars not or scarcely traceable: a disco-postdiscal band orange rufous, tapering costad, separated into spots except behind, its distal edge about parallel to outer margin: a series of admarginal spots of the same colour.—Hindwing: blackish brown before cell; abdominal fold greyish basally, pale orange rufous distally; discal band orange rufous, deeper in tint behind where it gradually shades off into the rufous chestnut postcellular area, somewhat constricted at SC^2 , postdisco-submarginal band brownish black, sometimes almost separated into spots, proximally convex, distally concave between veins; admarginal interspaces broad, 3 to 4 mm., halfmoon-shaped, either separated by the black veins, or fused to a continuous band; marginal line black; fringe white between veins.

Underside: chestnut, from pale chestnut to tawny ochraceous in outer marginal region of forewing; bars black, bordered with white.—Forewing: cell-bar 2 circular, 3 elongate, oblique, 4 transverse, thin, close to bar D; submedian bar M^1 — M^2 heavy, just behind base of M^1 , bar R^3 — M^1 present in angle of veins R^3 and M^1 ; submedian and median bars M^1 — SM^2 fused together to a large patch, median bars R^3 — M^2 more distal than in all the allied species (except *luctetinctus*), bar R^3 — M^1 being about 9 mm. distant from base of M^1 , white edges of these long bars comparatively thin, median bar R^2 — R^3 fused with bar D, bars SC^4 — R^2 partly obsolete, but their white borders fused to a nearly straight band: discal bars absent, but their white borders present as a double series of very thin white lines from SC^4 to M^1 , the last touching median bar, discal interspaces M^1 — SM^2 pale ochraceous, fused with the postdiscal interspaces; postdiscal black bars represented by black spots, spots SC^4 — M^1 rather small, the others larger and confluent, all distally sinuate upon internervular fold, distally bordered with white, this scaling forming M-shaped markings between R^2 and M^1 , while between M^2 and SM^2 (where it is bluish) it forms two or three dashes; admarginal interspaces rather large, pale ochraceous behind, more tawny ochraceous anteriorly.—Hindwing: black bars all very thin as in *druceanus*, the subbasal black and white bars SC —(SM^1) continuous with the submedian bars in front of SC and C , the latter two broad, their black central lines in the southern subspecies absent, forming a purely white band which stands close to PC at C ; cell-bar 4, bar D and median bar R^2 — R^3 placed as in *pollux*, joined together at R^2 ; black median bars partly absent; white discal band considerably narrower than in *druceanus*, including a series of tawny patches which divide the white band into a proximal line, which represents the white borders of the median bars, and a distal line, which represents the white borders of the discal bars; postdiscal bars C — R^2 as triangular spots, the others transverse, linear, thin, all bordered with bluish white lines distally which, at veins SC^3 and R^1 , form obvious angle-shaped markings similar to those of *C. pelias* and allies; submarginal bars thin, sometimes curved, edged white (or bluish white) proximally; submarginal interspaces dark cinnamon rufous, narrower than the admarginal ones, at least interspaces R^2 — M^2 ; admarginal interspaces ochraceous, or tawny ochraceous, rather

narrower than above; anal ring small, olivaceous with two white submarginal dots; edge of wing dentate as in *druceanus*, tails pointed.

♀. Essentially like ♂, tawny band of forewing, above, wider.

Length of forewing: ♂, ♀, 40—43 mm.

Hab. Sierra Leone to Northern Angola. A rare species in collections. Dr. Butler, in his Revision of the genus *Charaxes*, said, that "up to the present time Drury's figures are all that remain to show us what this species is like." However, up to 1896 (the date of publication of the *Revision*) *Ch. eudoxus* had already been recorded again by Möschler from Ashanti and by Dewitz from Angola. Dr. Pogge obtained apparently quite a number of specimens in Northern Angola.

a. *Ch. eudoxus eudoxus*.

Papilio Eques Achivus eudoxus Drury, *l.c.* (Sierra Leone).

Papilio Nymphalis eudoxus, Fabricius, *Ent. Syst.* III. 1. p. 65. n. 203 (1793).

Nymphalis eudoxus, Godart, *Enc. Méth.* IX. p. 352. n. 6 (1823); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 12 (1850); Kirby, *Cat. Diurn. Lep.* p. 268. n. 9 (1871).

Charaxes eudoxus, Butler, *Proc. Zool. Soc. Lond.* p. 626. n. 10 (1865); *id.*, *Cat. Diurn. Lep. descr. by Fabr.* p. 53. n. 13 (1869); Möschl., *Abh. Senk. Gesellsch.* XV. p. 61. n. 98 (1890) (Aburi); Auriv., *Ent. Tidskr.* XV. p. 310. n. 187 (1894) (♀ similar to ♂); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 352. n. 7 (1896); Auriv., *Köngl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 12 (1899) (S. Leone; Ashanti; Kamerun; non Angola).

♂. Orange rufous band of forewing extending to SC⁴, four upper partitions separated from one another; black postdisco-submarginal band of hindwing considerably broader than orange rufous admarginal band, the latter consisting of halfmoons which are not completely fused together. On the *underside*, black submedian and median bars of forewing M¹—M² elongate; two upper black submedian bars of hindwing as well as black costal median bar present.

♀. Similar to ♂ (see above).

Hab. Sierra Leone; Ashanti; Cameroons. A ♂ agreeing with Drury's figure is in the Oxford Museum; a ♂ from Buea, Cameroons, in Dr. Standinger's collection; a specimen from Aburi, Ashanti, in the Senkenbergische Museum at Frankfort-on-the-Maine.

b. *Ch. eudoxus mechowii* Oberthür i. l. (Nov. Zool. VI. t. 8. f. 3).

Nymphalis eudoxus, Dewitz (non Drury, 1782), *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 17 (1879) (N. Angola).

Charaxes eudoxus, Aurivillius, *Köngl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 12 (1899) (pt.; Angola).

♂. Band of forewing *above* about 6 mm. distant from tip of vein SM², strongly tapering costad, stopping at SC⁵, four upper spots small, luniform (*type*) or rounded elongate. Black postdisco-submarginal band of hindwing interrupted at veins R³ to M², or M¹ and M², anteriorly as wide as, or a little wider than posteriorly, considerably narrower than the admarginal band. On *underside* the submedian and median bars M¹—M² very heavy, patch-like, black costal and subcostal bars of submedian and median series absent.

♀. Not known.

Length of forewing: ♂, 43 mm.

Hab. Northern Angola (Mehow), 1 ♂ (*type*) in coll. Oberthür: Beni Bendi, Sankrn, Congo Free State (L. Cloetens, January 1895), 1 ♂, in Mus. Bruxelles;

1 ♂ in coll. H. Adams (from coll. Honrath) without locality, but doubtless collected by Major Mechow or Dr. Pogge in Northern Angola; 2 ♂♂ from Northern Angola ("Guinea inf." Pogge) in Dr. Standinger's collection, also in the Berlin Museum from the same country.

Ch. eudoxus connects *druceanus* with the allies of *Ch. jason* in the pattern of the *underside*.

♂³. Dentition of hindwing strong, tooth M¹ prolonged to a tail.

52. *Charaxes andranodorus*.

Charaxes cinadon, Butler (*non* Hewitson, 1870); *Aun. Mag. N. H.* (5). V. p. 335. n. 12 (1880) (Fianarantsoa).

Charaxes andranodorus Mabile, *Bull. Soc. Ent. Belg.* XXVIII. p. 184 (1884) (Madagasc., ♂); id., in Grandid., *Hist. Madag., Léop.* I. p. 182. n. 3. t. 21. f. 1. 1a, ♀, t. 25 a. f. 1. 1a, ♂ (1885-87) (Madag.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 351. n. 4 (1896) (Fianarantsoa; Ankafana, Betsileo); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 10 (1899) (Madag.).

Charaxes zoippus Mabile, *Bull. Soc. Ent. Belg.* XXVIII. p. 184 (1884) (Madag.); id., in Grandid., *Hist. Mad., Léop.* I. p. 179. n. 2. t. 25. f. 2. 2a (1885-87) (Madag.).

Charaxes spec., Oberthür, *Bull. Soc. Ent. Fr.* p. 11 (1888).

♂. Body *above* deep ferruginous, white line behind eye conspicuous, dots on head obliterated; *underside* brighter ferruginous; palpi with a very broad pure white lateral band which does not quite reach tip of second segment, no black line on this segment, apical segment very short, black, with a few ferruginous scales below; sterna with black, brown and white oblique bands, abdomen with a black medial stripe, broad at base, edges of segments in this stripe white, this scaling extended laterally to a white stripe; anterior legs white beneath, deep black above, the other legs white, femora black above, with dispersed white scales.

Wings above reddish ferruginous, markings deep black.—Forewing: cell-bar 3 and 4 present, the former the smaller of the two, both more or less triangular, not reaching M; bar D very heavy, narrower between R² and R³ than in front; no submedian bar, but median bars very heavy, bars M²—(SM¹) and (SM¹)—SM² more or less longitudinal, not fused together, bar M¹—M² a large patch, somewhat concave distally, convex proximally, anteriorly touching M, bar M¹—M² a similarly shaped patch, more distal, occasionally dilated to base of M², and then touching bar D, no median bar R²—R³, bars SC¹—R² fused to a patch of variable size, sometimes produced basad to bar D, but often band-like, to it is joined discal bar R²—R³ which is much more proximal than discal bars SC¹—R², these latter three bars continuous, forming a triangular band which is joined along veins SC¹—R³, as is bar R²—R³ along R², to black postdisco-marginal band, reddish ferruginous interspaces SC¹—R³ almost or completely isolated, smaller than the discal interspaces SC⁵—R²; postdisco-marginal black band somewhat wider behind than in front, the black scaling produced basad at veins, hence the reddish ferruginous discal interspaces R³—M² partly isolated, interspace M²—SM² about as wide at (SM¹) as black band; the band includes a series of reddish ferruginous marginal spots which are not so wide as their black interspace, more or less rounded, the upper ones somewhat elongate, spots M²—SM² separate.—Hindwing: basal area in and behind cell somewhat tawny, bases of cellules C—R¹ with purplish black patches, some black scales occasionally also before base of R², bar D vestigial in front in some individuals; median area bright orange in front; disco-marginal

area black, somewhat sinuate between veins, extended to base of M^1 , suddenly narrowed from (SM^1) to abdominal margin, the discal portion of the black area being represented beyond (SM^1) by an obscure bar which separates an ochraceous, triangular patch from the rest of the abdominal fold; two blue submarginal dots M^2 — SM^2 ; admarginal interspaces M^2 — SM^2 mostly fused to a rather thin yellowish or bluish olive buff line, the other admarginal interspaces not marked, or interspaces C — R^3 represented by thin, ochraceous or tawny, lunules.

Underside deep ferruginous, changing into ochraceous towards abdominal angle of hindwing and into ferruginous orange on forewing at outer margin and posteriorly on disc; white lines and bands silvery white, glossy, bars black.—Forewing: cell-bars inclusive white borders wider than interspaces, black bar 4 about $2\frac{2}{3}$ mm. broad at widest point; submedian and median bars M^2 — SM^2 merged together to a large patch, bars M^1 — M^2 also confluent, but generally divided in front by a white line, median bar R^3 — M^1 17 mm. from base of cell, much more distal than bar M^1 — M^2 , median bar R^2 — R^3 fused with bar D, but in most examples there is a white spot behind R^2 which partly isolates bar R^2 — R^3 , bars SC^4 — R^2 less heavy, upper one a mere dot, white borders forming a band which is as wide as the ferruginous interspace at its proximal side, that band at right angles to costa as in *phraortes*, hence much less directed apical than in *druceanus*, joined at R^2 to white discal band, which is from SC^4 to R^3 little wider than postdiscal ferruginous band, includes between R^3 and SM^2 a series of more or less conspicuous ferruginous spots or lines or patches which partly or totally separate the white distal borders of the median bars from the discal band, and is distally sinuate upon veins; discal black bars SC^4 — R^1 present; postdiscal bars SC^3 — R^3 more or less transverse, bar R^1 — R^2 generally rounded, bars R^3 — SM^2 larger, straight proximally, rounded distally, bars M^2 — SM^2 nearly completely fused together, but division obvious, bars SC^3 — M^2 each with a sharply defined silvery white patch at outside; patches R^1 — M^2 half-moon-shaped, patches SC^4 — R^1 larger than the others, the uppermost elongate ovate, these patches represented between M^2 and SM^2 by bluish white, less sharply defined, spots; veins black at extremities, this scaling extended basad to postdiscal black bars, at least at veins M^1 — SM^2 , within this black scaling stands upon each vein a conspicuous, silvery white, dash or elongate ovate spot, veins (SM^1) and SM^2 excepted.—Hindwing: costal submedian and upper two or three median black bars absent; basal costal bar inclusive white border more or less ovate, the white border often extended to PC and base of C; white borders of upper two submedian bars, cell-bar 2, and subbasal bar M —(SM^1) fused to a band which stops at (SM^1), the ferruginous subbasal interspace continuous with the ferruginous line near basal abdominal margin and joined along (SM^1) to the ferruginous mediano-submedian interspace which itself stands in connection with the disco-postdiscal ferruginous interspace, being continued along (SM^1); white costal median spot either isolated, or joined to the white submedian band; a broad white band occupies the middle of the wing, this band is convex proximally, slightly biconcave distally, narrowed almost into a point at (SM^1), broadest between R^2 and R^1 , about 9 mm., it consists of the white borders of the median and discal bars plus the interspaces between these bars which are also white, only the costal discal interspace being mostly ferruginous, and being joined across C to the ferruginous mediano-submedian ferruginous band; the white band includes cell-bar 4, submedian bar M^1 — M^2 close to base of M^2 and submedian bar M^2 —(SM^1), further median bars C — R^1 , which are small and sometimes absent, median bar

R¹—R³, which is heavy and stands very little distally of base of M¹, short median bar R³—M¹, long and oblique median bar M¹—M² and short bar M²—(SM¹) which points basad; upon this band follows a ferruginous band which is proximally slightly biconvex, distally irregularly biconcave, postdiscal black bars C—R¹ vestigial at outer edge of this band, bars M²—SM² marked; submarginal bars conspicuous, transverse, slight curving distad, bars M²—SM² much more distal than bar M¹—M², submarginal interspaces silvery white, except interspaces M²—SM² which are olive black, including two blue and white dots, these last interspaces not so white as the preceding ones; admarginal interspaces ochraceous, anal ones fused together, greenish, with white triangular spots distally at veins C—M²; black marginal line broader between than at veins; black abdominal lines without ferruginous interspaces between, joined together at ends by means of the median bars; discal bars (SM¹)—SM³ present, interspace between them and respective median bars silvery white, discal bar M²—(SM¹) vestigial or distinct, short; edge of wing very strongly dentate; tails long, slender, pointed, tail R³ 8 mm., tooth M¹ 4 mm., tail M² 9 mm.

♀. Like ♂, larger, paler ferruginous, ferruginous admarginal interspaces of hindwing all marked, but interspaces R³—M² divided between veins into long triangular spots standing along veins; tails longer than in ♂; subbasal ferruginous band of hindwing below not joined along (SM¹) to submedian band of same colour.

Length of forewing: ♂, 50 mm.

” ” ♀, 55 mm.

Penis very slender, not dilated at apex as in *druceanus*, with a small tooth 1 mm. from end.

Hab. Madagascar: Fianarantsoa; Ankafana, Betsileo.

Mabille's *Charaxes zoippus* is nothing else but *andranodorus*; the figure of the ♂ of *andranodorus* in *Hist. Mad., Lép.* is drawn from a specimen of which tail M² was broken. The species is apparently rare, as it is represented in few collections by anything like a series.

*h*². Costal median bar of hindwing below present.

*h*³. Black postdiscal bars of hindwing below well marked, convex proximally.

*i*¹. Wings above tawny, at least discal band of forewing.

*g*⁵. Submarginal interspaces of hindwing below silvery white all over.

53. *Charaxes phraortes*.

Charaxes phraortes Doubleday, *Ann. Mag. N. H.* XX. p. 60 (1847) (Madagascar); Butl., *ibid.* p. 625. n. 6 (1865) (Madag.); Guen., in Vinson, *Voy. Madag., Annexé F.* p. 28 (1865); Butl., *Lep. Ecot.* p. 26. t. 10. f. 6 ♀ (1870); Saalm., *Lep. Mad.* p. 86. n. 123 (1884) (Madag.); Mab., in Grandid., *Hist. Mad., Lép.* I. p. 177. n. 1. t. 25. f. 1. 1a (1887) (Madag.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 352. n. 5 (1896) (Madag.); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 7 (1899) (Madag.).

Nymphalis phraortes, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 22 (1850) (Madag.); Kirby, *Cat. Diurn. Lep.* p. 267. n. 6 (1871) (Madag.; *cit. fals.!*).

♀. *Body above* tawny ferruginous, dots on head not obvious, white line behind eye conspicuous; *underside* ferruginous, middle line of pro- and mesosternum and three oblique lateral lines on meso- and metasternum white; palpi with a broad white stripe which does not quite reach tip of second segment, third segment all

black, second without black line ; anterior leg black above, white beneath, the other legs dirty white, femora black above, with dispersed, white, scales ; abdomen pale ochraceous, whitish towards base, sides with ill-defined black and white scaling.

Wings above : base tawny ferruginous, rest ferruginous orange, marked with black patches and bands.—Forewing : all the bars very heavy ; cell-bars 3 and 4 represented by patches which do not reach M, upper patch much heavier than the other ; submedian bar M^1-M^2 present, in front of median bars M^2-SM^2 ; median bars R^3-M^2 very large, $3\frac{1}{3}$ mm. broad, somewhat halfmoon-shaped, bar R^3-M^1 more distal than the others, median bar R^2-R^3 fused with bar D, forming with it a hammer-shaped patch, bars SC^4-R^2 forming a similar mark, bar R^1-R^3 being broader than the others touching the discal bar R^2-R^3 ; discal bars SC^4-R^3 present, halfmoon-shaped, joined along veins to black postdisco-marginal area, bars SC^4-R^1 very much broader than bars R^1-R^3 ; postdisco-marginal black area heavily dentate at veins R^3-M^2 ; marginal ferruginous orange dots of nearly equal width, about 1 or $1\frac{1}{2}$ mm. wide, postdiscal spots SC^4-R^3 of that colour isolated, rounded, spot R^1-R^2 small ; median series of bars extending generally beyond SM^2 .—Hindwing : median bars $C-R^1$ present, the second 3 mm. from base of R^1 , the first 2 mm. more distal ; black postdisco-submarginal area only $2\frac{1}{2}$ mm. from base of M^1 , anteriorly narrower, measuring $5\frac{1}{2}$ mm. between C and SC^2 , black colour somewhat produced basad between R^2 and R^3 ; a complete series of ferruginous orange lunules, upper ones heavier, nearly 2 mm. broad between veins, all slightly separated at veins, black marginal line 1 wide, even in width.

Underside ferruginous chestnut ; bars deep black, much heavier than in *pollur.* white borders also heavy, silvery white.—Forewing : cell-bars 2 and 3 more or less circular, 4 also rounded off behind ; submedian and median bars M^2-SM^2 fused to a large patch which extends to base, median bars SC^4-M^2 placed as above, bar R^2-R^3 more or less completely separated from bar D, but the white borders of these bars always fused ; pinkish white discal patches R^3-SM^2 of almost the same width, each more or less rectangular, patch M^2-SM^2 narrower than postdiscal ochraceous patch M^2-SM^2 ; discal black bars SC^4-R^3 present, bars R^1-R^3 thin, the last of them close to median bar R^1-R^2 ; postdiscal bars represented by black spots, spots SC^6-R^3 small, smaller than the ochraceous spots at their proximal side, spot SC^4-SC^6 a little larger, spot M^1-SM^2 large, all with ochraceous spots resp. patches at proximal side, and all bordered outwardly by bluish grey, heavy, semicircles ; admarginal tawny ochraceous spots much larger than those of upperside, veins with black patches at ends, more or less covered with bluish grey scaling.—Hindwing : black bars up to median series inclusive of their white borders much broader than the ferruginous chestnut interspaces, which is especially obvious in cell ; median bar $C-SC^2$ more distal than the median bars next to it, median bar R^2-R^3 4 mm. distant from bar R^1-R^2 , with a ferruginous spot between itself and bar D, median bar M^1-M^2 long, oblique, pointing anad, median bars M^2-SM^3 at right angles to veins, continuous, joined to the black abdominal lines, bar $M^2-(SM^1)$ more proximal than bar $(SM^1)-SM^2$; submedian bar $M^2-(SM^1)$ long, extending straight from base of M^2 to end of longitudinal line (SM^1) , the ferruginous chestnut interspace between the bar and this line a long narrow triangle ; no discal bars except a continuous, almost straight, transverse, very slightly oblique line from M^2 to abdominal margin ; postdiscal interspaces beyond irregular, silvery white ; discal band ferruginous chestnut, this colour forming a band of about 3 mm. breadth, curved distad before R^3 , partitions R^3-M^2 halfmoon-shaped, partition M^2-SM^2

ochreous; postdiscal bars vestigial, densely shaded with silvery white like the submarginal interspaces, bars M^2-SM^2 , however, marked; submarginal black bars transverse, not abbreviated at ends, but not continuous, as the preceding bar is always a little less distal than the following one; admarginal interspaces ochraceous, paler behind, whitish at tips of veins; black marginal line thinner than the black submarginal bars, edge of wing strongly dentate, as in *pollux*, with three tails, second the shortest.

♀. Larger.—*Wings above* rather paler than in ♂.—Forewing: median bar R^2-R^3 separate from bar D, submedian bar M^1-M^2 and median bars M^2-SM^2 wanting.—Hindwing: no median bars visible; middle admarginal spots rather larger than in ♂.

Underside: the ferruginous chestnut colour more extended, the white discal bands of both wings wider, the postdiscal ferruginous chestnut band of hindwing more broken into spots at veins, postdiscal bars of hindwing a little better marked, tail M^1 shorter.

Length of forewing: ♂, 45 mm.

” ” ♀, 50 mm.

Penis as thick as in *Ch. jason*, less curved before end, one heavy dorsal tooth at bent, with another smaller one behind.

Hab. Madagascar. In the Tring Museum 1 ♂, without more precise locality. Kirby, *l.c.*, cites the *Proc. Zool. Soc. Lond.* as being the place where the species was described by Doubleday, and the authors who, after the publication of Kirby's Catalogue, mention *phraortes* have accepted that erroneous reference.

*h*⁵. Submarginal interspaces of hindwing below not white in centres.

*g*⁶. Admarginal patches of hindwing above large, veins between them heavily black; tooth M^1 short, blunt; underside olive russet.

54. *Charaxes phoebus*.

Charaxes phoebus Butler, *Proc. Zool. Soc. Lond.* p. 625. n. 8. t. 36. f. 2. ♂ (1865) (Abyssinia); Oberth., *Ann. Mus. Civ. Genova* XV. p. 167. n. 48 (1879) (♂, ♀; Shoa, July); *id.*, *l.c.* XVIII. p. 728. n. 59 (1883) (Feleklek; Sciotalit, I. II. VI. VII. XII.); Butler, *Journ. Linn. Soc. Lond.* XXV. p. 352. n. 6 (1896); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 9 (1899) (Abyssinia).

Nymphalis castor (sic!) var. *a. Char. phoebus*, Kirby, *Cat. Diurn. Lep.* p. 268. sub n. 7 (1871).

♂ ♀. *Body above* tawny russet, mesonotum with an olivaceous tint.

Underside olive russet; palpi with thin white line, third segment black, second with a black lateral stripe on free part, black and grey stripes underneath legs indistinct, middle of abdomen blackish in ♀, segments slightly edged with grey.

Wings above a little less bright than in *pollux*.—Forewing: cell-bar 4 short, narrow, bar D about 1 mm. wide in middle, dilated distad before and behind R^1 ; median bars R^3-M^2 transverse, more distal than in *pollux* and thinner, median bar R^2-R^3 present, close to bar D, which it generally touches, or with which it is partly fused, bars SC^4-R^2 more distal than in *pollux*; discal bars SC^4-M^2 present, the posterior ones as small spots, bar R^2-R^3 extended basad, ill-defined bar SC^4-SC^5 also widened, but cellule SC^4-SC^5 orange between discal and median bars; postdisco-submarginal black band of nearly even width (4 to 5 mm.), incised at posterior veins, somewhat sinuate between upper veins, slightly widening from R^1 to SC^4 , strongly dilated basad before SC^4 , upper veins somewhat scaled black,

separating the orange postdiscal band into spots, partition R^2-R^3 of the same width as respective partition of black band, the preceding ones gradually somewhat smaller; orange admarginal spots becoming smaller costad, posterior ones about half the width of the black band, the spots separated by the black veins, spots M^2-SM^2 fused, but incised distally upon (SM^1).—Hindwing: ochraceous orange, discal band better defined than in *pollux*, median bar $C-SC^2$ and bar D vestigial; postdisco-submarginal black band proximally convex between veins, distally slightly produced into points between veins, partition $C-SC^2$ narrower than the others, the band only $5\frac{1}{2}$ mm. at widest point, last partition almost isolated, including one minute and another larger pale blue submarginal dot; admarginal interspaces dark orange, separated by the rather thin black veins, upper interspaces widest, measuring 4 to 5 mm. before SC^2 , anal one narrowest, $1\frac{1}{2}$ mm. broad, somewhat ochreous; black marginal line as in *druceanus*.

Underside olive russet; bars very much thinner than in *pollux*, white band of fore- and hindwing much better defined distally than in *pollux*, except from M^2 to internal margin of forewing (where the band is pinkish).—Forewing: cell-bar 3 half the width (white border included) of olive russet interspace following it, black cell-bar 4 a very thin line; median bar R^3-M^1 5 mm. from base of M^1 , bar R^2-R^3 partly separate from bar D, bars SC^4-R^1 obsolete, bar R^1-R^2 thin, olive, uniform, bright olive russet spots at outer side of median bars R^3-M^2 as wide as bars inclusive white border; discal bars SC^5-M^1 present, represented by rather ill-defined spots situated in middle of white band, bar SC^4-SC^5 obliterate; postdiscal band following white band gradually narrowing costad, a little more ochraceous than basal area; postdiscal black spots smaller than clayish ochraceous admarginal ones, spots SC^4-SC^5 and R^2-M^1 very short and thin, almost obsolete, transverse, linear, only spots M^2-SM^2 triangular, these two almost separate.—Hindwing: basal costal bar a dot; black lines with white borders of abdominal fold scarcely half the width of interspaces in middle; median bar M^1-M^2 longer than in *pollux*, bar $M^2-(SM^1)$ more distal than in that species; discal abdominal bar as in *pollux*, but thinner; postdiscal band russet, ochreous beyond M^2 , somewhat incised at veins $C-R^3$; postdiscal black bars very thin, halfmoon-shaped, bordered white as in *pollux*, but less heavily, last bar forming with submarginal one a ring-shaped patch which is well separated from the edge of the wing; submarginal bars also very thin, partly vestigial only; submarginal interspaces shaped as in *pollux*, but clayish bistre brown; admarginal interspaces clayish tawny ochraceous, ochreous beyond M^1 , posterior ones wider than on upperside; marginal line very thin in front; dentition of wing nearly as in *pollux*, but tooth M^1 shorter than teeth R^1 and R^2 , tail R^3 5 mm., tail M^2 4 mm.

♀. Larger than ♂. Discal band of forewing *above* paler, median bars R^3-M^2 rounded, bar R^2-R^3 separated from bar D, admarginal spots halfmoon-shaped, being concave proximally.—Hindwing: discal band cream colour, sharply defined, extending to abdominal margin, $5\frac{1}{2}$ mm. broad at SC^2 , of about even width from SC^2 to M^2 , followed by a tawny orange band, which is narrower than in ♂; black postdisco-submarginal band 7 mm. broad between SC^2 and R^1 , proximally less convex between veins, black colour somewhat produced basad upon veins, anal patch only $3\frac{1}{2}$ mm. wide; admarginal spots somewhat paler than in ♂, also somewhat narrower, especially the posterior ones, anal one almost cream-colour; black marginal line about 1 mm. broad.

Underside as in ♂; postdiscal black spots of forewing a little less linear

submarginal interspaces of hindwing more scaled white at postdiscal and submarginal bars; tails broader, upper one 7 mm. long, second 5 mm.

Length of forewing: ♂, 41 mm.

” ” ♀, 47 mm.

Hab. Shoa, Abyssinia; found by Antinori in July at Mahal-Uong, Axaleua, Feleklek, and Scioatalit (= Shoatalit). In the Triug Museum 2 ♂♂, 2 ♀♀ from Shoatalit, Shoa, January, June, December (Antinori).

Antinori says that the species was attracted by exudations of a solanaceous plant.

*h*⁵. Admarginal patches of hindwing small; tails acute, tooth M¹ pointed, underside red chestnut.

*e*⁷. Discal band of hindwing tawny or pale buff

55. *Charaxes pollux*.

Papilio Eques Achirus pollux Cramer, *Pap. Exot.* I. p. 61. t. 37. f. E. F (1775) (Guinea).

Papilio Eques Achirus castor, Fabricius (*non* Cramer, 1775), *Gen. Ins.* p. 251. n. 30. 31 (1776).

Papilio Nymphalis Phaleratus camulus Drury, *Illustr. Ex. Ins.* III. p. 41. t. 30. f. 1. 2 and Index (1782) (S. Leone).

♂. *Body above* tawny, darker in front than behind; head with four rather indistinct dots and a postocular line white, a dorso-lateral stripe on second, and the whole third segment of palpi black; *underside* tawny ochraceous; palpi with a white lateral line; breast with black streaks underneath legs, bordered with white, a white streak on mesosternum near base of wing; anterior tibia and tarsus white beneath, black or brown above, the other legs clay colour, femora black above, with white dispersed scales; abdomen with a white interrupted stripe at each side, which is broadest and most distinct at base, where the stripe is bordered black mesially.

Wings, above: basal area tawny, followed by a broad ochraceous orange disco-postdiscal band; postdisco-marginal area black.—Forewing: cell-bar 4 represented by a heavy spot, bar D also heavy; median bars R³—M² as heavy spots, spot R³—M¹ generally the larger, close to D³, median bars SC⁵—R² elongate, heavy, often prolonged basad to cell, followed behind R² by a streak which represents the median and discal bars R²—R³; discal bars SC⁴—R¹ heavy, fused together, the upper one prolonged basad, completely (or nearly so) filling up the basal half of the cellule SC⁴—SC⁵; the black colour extends generally also along SC⁵—R², so that discal ochraceous orange spot SC⁵—R¹ and postdiscal ones SC⁴—R¹ are more or less isolated, all these patch-like bars black, discal bar R¹—R² as well as R³—M¹ sometimes vestigial, minute; black border of wing of about even width, 7 mm. broad at M¹, inner edge concave between veins from SC⁴—R² or R³; marginal dots generally present, pale orange, minute, the posterior ones the smallest as is the case in *Ch. brutus*.—Hindwing: discal area whitish towards costal margin; black outer area widest in middle, its inner edge being nearly straight, not following the curve of the outer margin, 8 to 9 mm. broad between R² and R³; pale blue submarginal dots M²—SC² present, mostly merged together; admarginal spots absent or present, orange tawny, anal one olive buff; fringe white between veins.

Underside red chestnut; bars heavy, black, heavily bordered with white, placed as in *brutus*.—Forewing: submedian and median bars M²—SM² generally

fused to a large patch ; discal bars SC^4-M^2 or SC^4-M^1 present, bar R^2-R^3 behind the short band of median bars SC^4-R^2 ; between short discal bars R^3-M^2 and median bars are two ochraceous spots ; white band somewhat pinkish behind and gradually shading into the orange ochraceous postdiscal band ; postdiscal bars represented by black triangular patches which are bordered each with a grey, angle-shaped, line distally, the lines at internal angle pale blue, separated from one another between M^2 and SM^2 into three dashes ; veins with black patches at ends, patches R^1 and R^2 larger than the others, veins R^3-M^2 generally with bluish white scaling before end.—Hindwing : basal costal bar somewhat bean-shaped ; white discal band about as broad as the orange ochraceous postdiscal one ; median bar M^1-M^2 a little distal of base of M^1 ; white band with a tawny patch at costal margin, followed generally by a series of smaller patches down to R^3 ; no black discal bars except between M^2 and abdominal area, these contiguous with orange ochraceous postdiscal band, postdisco-marginal area of the same pattern and colour as in *Ch. brutus brutus*, submarginal interspace M^1-M^2 chocolate ; chocolate interspace behind black line upon SM^2 triangular ; edge of wing sharply dentate, tail R^3 4 to 5 mm. long, tooth M^1 $1\frac{1}{2}$ mm., tail M^2 3 to 4 mm.

♀. Similar to ♂, wings wider ; disco-postdiscal band of upperside somewhat paler ; abdomen beneath much more extended, the white scaling reduced.

Length of forewing : ♂, 36—45 mm.

“ “ ♀, 41—51 mm.

Clasper narrower than in *Ch. jason*, hook very slender in a dorsal view, evenly curved ; penis thin, somewhat dilated at end, not suddenly bent before apex as in *jason*, without teeth ; penis-funnel obviously narrowed towards end, apex convex above, turned downward to a sharp hook.

Hab. Sierra Leone to Angola, Congo to the Naudi country, Uganda Protectorate, Nyassaland, Manicaland ; not found in the regions between the south shore of the Victoria Nyanza and the East Coast. A rather common insect.

a. *Ch. pollux geminus* Rothsch., subsp. nov.

Charaxes pollux, Trimen (*non* Cramer, 1775), *Proc. Zool. Soc. Lond.* p. 41. n. 64 (1894) (Manica) ; Butl., *ibid.* p. 252. n. 8 (1895) (Zomba) ; *id.*, *l.c.* p. 720. n. 7. (1895) (Zomba) ; *id.*, *Journ. Linn. Soc. Lond.* XXV. p. 352. n. 8 (1896) (pt. ; Zomba) ; Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 8 (1899) (Zomba).

♂ ♀. Hindwing *above* with admarginal spots, at least the upper ones present ; on the underside the hindwing bears in ♀ a triangular chocolate patch between bar D and apical cell-bar ; black abdominal line between SM^2 and SM^3 as a rule not hammer-shaped distally, postdisco-submarginal black anal ring of hindwing separated from anal edge of wing ; tails sharply pointed in both sexes.

Hab. British Central Africa and Manicaland. In the Tring Museum 6 ♂♂, 4 ♀♀ from Nyassaland ; Lauderdale (*type*), Chipaika Estate, Bandawe (F. Watkinson), Zomba, December (Dr. P. Rendall).

b. *Ch. pollux pollux*.

Papilio Eques Achivus pollux Cramer, *Pap. Erot.* f. p. 61. t. 37. f. e. F (1775) (Guinea).
Papilio Eques Achivus castor Fabricius (*non* Cramer, 1775), *Gen. Ins.* p. 251. n. 30. 31 (1776) ; Goeze, *Ent. Beytr.* III. p. 74. n. 16 (1779) ; Fabr., *Spec. Ins.* II. p. 11. n. 44 (1881) ; *id.*, *Mant. Ins.* II. p. 6. n. 48 (1787) ; Jabl. & Herbst, *Naturs. Schmetz.* IV. p. 57. n. 151. t. 63. f. 1. 2 (1790) ; Gmel., *Syst. Nat.* I. 5. p. 2235. n. 301 (1790) (pt.).

Papilio camillus Drury, *Illustr. Exot. Ins.* III. p. 41. t. 30. f. 1. 2 (1782) (S. Leone).

Papilio Nymphalis castor, Fabricius, *Ent. Syst.* III. 1. p. 63. n. 196 (1793) (Guinea).

Eriboea polussa (!), Hübner, *Verz. bek. Schmett.* p. 47. n. 427 (1816-27).

Papilio castor, Donovan, *Nat. Reposit.* II. t. 116 (1826).

Papilio camillus, id., *l.c.*

Nymphalis castor, Godart, *Enc. Méth.* IX. p. 351. n. 4 (1823) (Guinea); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 3 (1850) (S. Leone; Congo).

Charaxes castor, Doubleday, *List Spec. Lep. Ins. Brit. Mus.* I. p. 110 (1844) (S. Leone; Congo); Butl., *Proc. Zool. Soc. Lond.* p. 623. n. 7 (1865) (S. Leone; Congo).

Charaxes pollux, Butler, *Cat. Diurn. Lep. descr. by Fabr.* p. 53. n. 14 (1869) (S. Leone); Druce, *Proc. Zool. Soc. Lond.* p. 416 (1875) (Angola); Butl., *ibid.*, p. 60. n. 16 (1888) (Monbuttu, Equat. Afr.); Auriv., *Ent. Tidskr.* XII. p. 214. n. 134 (1891) (Cameroons); Schaus & Clements, *Sierra Leone Lepid.* p. 8 (1893); Auriv., *l.c.* XV. p. 310. n. 185 (1894) (Cameroons); Reb. & Rog., in Baumann, *Mussailand* p. 332. n. 37 (1894) (North Urundi); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 352. n. 8 (1896) (pt.; S. Leone; Angola; Monbuttu); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 8 (1899) (pt.; Senegal; S. Leone; Ashanti; Cameroons; Gaboon; Cbinchoxo; Angola; Monbuttu).

Nymphalis pollux, Kirby, *Cat. Diurn. Lep.* p. 267. n. 3 (1871) (*syn. ex parte*!).

Nymphalis castor, id., *l.c.* n. 7 (1871) (*syn. ex parte*!).

♂. No admarginal spots on hindwing *above* except the olive buff anal one which is occasionally present; on *underside* the anal ring of the hindwing touches the edge of the wing, the black line between SM² and SM³ is dilated at end, and in ♀ bar D of hindwing is so close to apical cell-bar that there is no or little chocolate scaling between them.

Hab. Sierra Leone to Angola and the Uganda Protectorate. In the Tring Museum 24 ♂♂, 14 ♀♀ from: Sierra Leone; Accra, Gold Coast; Gaboon R.; Bopota, Upp. Congo; Pt. Alice, Uganda, 19. vii. '94 (Dr. Ansorge); Nandi Station, Uganda Protectorate, 10. xii. '96 (Dr. Ansorge).

*f*². Discal interstitial band of hindwing above bluish white.

56. *Charaxes ansorgei* (Nov. Zool. V. t. 5. f. 2. ♂).

Charaxes ansorgei Rothschild, *Nov. Zool.* IV. p. 181. n. 5. (1897) (Patsho, Nandi Country, Dec. 11, 1896); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 231. n. 2a. and p. 538 (1899).

♂. *Body, above*, pale chestnut, dots on head obsolete, line behind eye creamy buff; *below* brownish clay colour, with pale chestnut oblique streaks on breast, abdomen clayish chestnut; palpi buff, with a thin white lateral line, free portion of palpi with a broad black dorso-lateral stripe; legs clay colour, femora black above with the usual sprinkling of pale scales, anterior tibia and tarsus brown above, white beneath.

Wings, above.—Forewing: basal area tawny chestnut; cell-bar 4 transverse, about 2½ mm. long, bar D as in *phoebus*; median bars M²—SM² small, ill-defined, bars R³—M² represented by large patches, patch M¹—M² halfmoon-shaped, diameters 3 and 4 mm., patch R³—M¹ broader, median bar R²—R³ close to bar D, but separated from it, rounded, bars SC⁵—R² as large patches, fused together, disco-postdiscal band tawny orange, separated into patches by the black veins; discal bars SC²—R¹ heavy, confluent, joined at veins to postdisco-marginal area, bar R²—R³ thinner, bar R²—R³ more basal, dilated basad, bar R³—M¹ represented by a dot, bar M¹—M² vestigial; marginal dots orange ochraceous, small.—Hindwing: purplish black, base more brown; a white discal band, slightly shaded with buff, about 4 mm. broad at SC², dilated between SC² and M² owing to an extended bluish

white scaling; abdominal fold wood brown, edge greyish buff; a small and a larger pale blue submarginal spot between M^2 and SM^2 ; admarginal spots tawny ochraceous, upper ones the largest, subrotundate, the posterior ones linear, transverse, anal one olive buff.

Underside: basal area chestnut, outer area russet olive, basal to discal bars olive, the others black, position of bars nearly as in *pollux*, white borders of bars rather wider than in *pollux* in costal region of both wings.—Forewing: median bars R^3 — M^2 concave distally, thinner than in *pollux*, olive bar R^2 — R^3 separate from bar D, bars SC^4 — R^1 feebly marked; discal interspaces M^1 — SM^2 pinkish white, distally as sharply defined as in *phoebus*, discal bars SC^4 — M^2 present, posterior ones mere dots, all placed close to postdiscal, russet olive, band (as in *pelias* and allies); postdiscal black patches less triangular than in *pollux*, white spots at outside of patches SC^4 — SC^5 and R^2 — M^1 rather conspicuous, blue spots M^2 — SM^2 joined together; admarginal spots russet.—Hindwing: basal costal bar as in *pollux pollux*; median bars R^2 — M^2 rather heavy, apical cell-bar separated from bar D by a chocolate triangle, abdominal lines inclusive white border much broader than olive chocolate interspaces; white discal band as sharply defined as in *phoebus*, narrower; postdiscal black bars as in *pollux*, but bars SC^2 — R^1 and R^3 — M^1 more proximal, hence the respective submarginal interspaces, which are like the others russet olive, wider than in *pollux*; admarginal interspaces slightly ochraceous; blue submarginal spots in anal ring; dentition of edge sharp, tails pointed, about 4 mm. long.

♀. Unknown.

Length of forewing: ♂, 38 mm.

Hab. Patsho, Nandi Country, 11. xii. '96 (Dr. Ansorge), 1 ♂.

The *type* of this species has so far remained unique.

*j*⁴. Base of forewing above black; discal interstitial band of patches of forewing above white, or maize yellow, upper patches sometimes shaded with orange.

57. *Charaxes brutus*.

Papilio Eques Achivus brutus Cramer, *Pap. Exot.* III. p. 82. t. 241. f. E. F (1779) (Cap. b. sp. ! *loc. err.*).

Papilio Eques Achivus cajus Jablonsky & Herbst, *Naturs. Schmett.* IV. p. 65. n. 154. t. 64. f. 1. 2 (1790) (Cap. b. sp., *loc. err.*).

♂. *Body above* olive black, sometimes more bistre, third segment of palpi black, free upperside of second segment of palpi, head and pronotum dark ferruginous, mesonotum somewhat 'greenish olive or steel blue; four indistinct dots on head and a line behind eye white; *underside* pale orange, palpi with a black dorso-lateral and a white ventro-lateral stripe; breast with black oblique streaks underneath legs edged with grey; abdomen white at side; forelegs black above, white beneath, tarsus with some orange scales, the other legs whitish clay colour, femora above black with dispersed white scales.

♂. *Wings above* brownish black, with a purplish tint in certain lights, crossed by a white, creamy white, or maize yellow band; fringe white between veins.—On forewing the band is interrupted at the veins, consisting of eight spots which become smaller costad, the last spots varying in width before SM^2 from 4 to 10 mm., outer edge of band parallel to outer margin of wing, distance about 8 mm.,

at spot SC^4 — SC^6 often a little inclining costad; median bars R^3 — M^2 in some specimens vestigial, forming the proximal border of the respective patches of the band; admarginal dots, if present, small, all of about the same size.—Hindwing: band considerably variable in width, widest in front, but often widely bordered with pale glaucous blue, in which case the band appears wider in and beyond cell than towards costal margin, stopping at (SM^1) or nearly reaching abdominal margin, distance of band from outer edge of wing 10 to 11 mm. at SC^2 , and 6 to 8 mm. at (SM^1); abdominal margin ochraceous; submarginal spots blue, mostly with white centres, generally only the last two or three present, spots C — R^2 seem to be always wanting; admarginal spots absent, or vestigial, or the series more or less complete.

Underside from base to white band red chestnut or rufous red or reddish cinnamon rufous, from band to outer margin varying from tawny ochraceous to tawny olive, basal to median bars with heavy and clearly defined white borders all round, these bars black, heavy, their centres often more or less extended olivaceous wood brown; veins partly thinly edged with white; band not interrupted.—Forewing: a white line along costal edge from base to beyond middle; black basal cell-spot absent, cell-bar 4 not or very little angled, at right angles to the veins like the other cell-bars, bar 3 heavier than 4, but often abbreviated and elongate-ovate; submedian M^2 —(SM^1) oblique, mostly joined to or fused with median bar M^2 —(SM^1), submedian bar M^1 — M^2 just before base of M^1 , about 1 to 2 mm. distant from median bar, both often joined together at M^2 , the interspace between them sometimes all white; median bar R^3 — M^1 about $\frac{1}{2}$ or 1 mm. more distal than median bar M^1 — M^2 , often slightly inclining basad, bar R^2 — R^3 fused with bar D, bars SC^4 — R^2 in the usual place, continuous, but often somewhat broken at veins; discal bars SC^4 — R^1 present, the others absent, but sometimes the rufous scaling which, if they were present, would separate them from the median bars, vestigial also between R^3 and M^2 ; the white or yellowish band is a disco-postdiscal band, the upper two partitions, SC^4 — R^1 , are postdiscal, width of band as above, rather wider behind; postdiscal bars represented by a series of black triangular or rounded patches which stand a little nearer the white band than the outer edge of the wing, the posterior patches largest, all bordered at least distally with bluish or buffish white scales which form generally a heavy M between M^2 and SM^2 ; veins with black, ill-defined spots at ends, and pale ones between.—Hindwing: costal edge thinly white; basal costal bar separate from veins, but often touching costal line; subbasal bar C — SC^2 absent, seldom vestigial; submedian costal bar at right angles to costal margin or inclining distad, 1 to $1\frac{1}{2}$ mm. from base of PC, bar C — SC^2 inclining distad, often touching cell-bar 2, more distal at C than costal submedian bar, reaching SC^2 at or before base of R^1 ; cell-bar 4 in front of base of M^2 , anteriorly prolonged along D^2 and D^1 , mostly joined along R^2 to bar D^3 ; median costal bar generally inclining basad, the series of median bars widely interrupted at veins, but almost straight down to (SM^1), bar R^2 — R^3 fused with bar D^3 ; longitudinal lines upon abdominal fold heavy, line SM^2 — SM^3 continuous distally with line SM^2 ; white discal band more or less narrowing abdominad, reaching abdominal margin, generally with some rufous scales anteriorly (and often also between R^2 and R^3) at the outer side of the median bars, these scales then separating the white border of the bars from the band, width of band variable; discal bars C — R^1 absent, the following ones also often absent, but those beyond M^2 generally marked, bordered white distally, placed at the outer edge of the

white band ; postdiscal bars represented by black spots, which are halfmoon-shaped, but have often the middle of the concave outer side somewhat produced, hence resembling slightly an anchor, bordered pale olive or white or bluish white distally, this white scaling produced into a pointed line upon internervular folds SC^2-R^1 and R^3-M^1 , the series of postdiscal spots about midway between white band and submarginal bars, curving distad between R^1 —and R^3 ; submarginal black bars transverse, the series parallel to outer margin, interrupted at veins, bordered white proximally, very thinly so distally ; bars M^2-SM^2 curved, forming with the respective postdiscal bars a ring ; submarginal interspaces varying from chestnut red to pale olive ; admarginal interspaces ochraceous, bordered milky white distally ; marginal line black, about $\frac{1}{3}$ mm. broad, continuous ; edge of wing sharply dentate ; tails triangular, mostly sharply pointed ; tooth M^1 often developed to a third, shorter, tail.

♀. Like ♂, but larger, wings, especially hindwing, broader, band wider, in Madagascar form band of forewing anteriorly orange, with spots R^1-R^3 produced basad, discal interspaces SC^1-R^1 also with orange patches ; abdomen beneath with a black, broad streak along each side, which is slightly interrupted at edges of segments.

Length of forewing : ♂, 34—45 mm.

” ” ♀, 44—50 mm.

Hook of clasper evenly and gently curved (in a dorsal view), slender ; penis somewhat widened at end, with one single, dorsal, tooth standing about 1 mm. before the apex ; penis-funnel moderately narrowed towards end, slender, apical edge produced downwards to a very short tooth.

Hab. Africa, south of the Sahara, Madagascar, a common species. We distinguish five subspecies.

a. *Ch. brutus junius*.

Charaxes brutus var. *junius* Oberthür, *Ann. Mus. Civ. Genova* XV. p. 166. n. 47 (1879) (Abyssinia ; June, July, Aug., Sept.) ; Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 231. sub n. 1 (1899) (Abyss.).

Charaxes junius Oberthür, *l.c.* XVIII. p. 728. n. 58 (1883) (Feleklek ; Sciotalit ; Let-Marefia ; I. II. VII. VIII. IX. X. XI. XII.).

♂. Head and pronotum shaded with olive, less bright ferruginous than in the other races ; body *below* tawny olive, sides of abdomen without white line.

Wings above blackish brown, band maize yellow, no blue scaling at edge of band.—Forewing : band 6 to 7 mm. broad at SM^2 , then gradually narrowing to R^3 , upper four spots smaller ; marginal spots maize yellow, but their proximal edges slightly shaded with buff.—Hindwing : band gradually narrowing down to (SM^1), 6 to 7 mm. broad at SC^2 , 2 mm. at (SM^1), reaching abdominal margin, where it is somewhat dilated again, outer edge of band a little concave between veins ; admarginal spots subluniformal, separated at veins, orange buff, all present, upper one a dot ; submarginal blue dots M^2-SM^2 merged together.

Underside reddish cinnamon rufous from base to discal band ; bars with wide grey centres, their black colour reduced to thin lines.—Forewing : band cream colour ; outer area of wing clayish ; postdiscal spots triangular, but rather small, the upper ones olivaceous ; black scaling at end of veins reduced.—Hindwing : band creamy white ; postdiscal interspace (outside white band) hazel, ochreous behind ; postdiscal bars as in the other continental forms, but smaller ; submarginal interspaces clayish hazel ; submarginal black bars partly obliterated, replaced by

white scaling, bars M^1 — SM^2 , however, present, closer to the postdiscal ones than in the other subspecies; admarginal interspaces (anal one included) ochreous; edge of wing bluntly dentate, a very short and blunt tooth at M^1 ; tails shorter, broader, and less pointed than in the other four races, upper tail 5 mm. long, second 4 mm., no tail at M^1 .

♀. Like ♂, but band broader, paler, blue submarginal dots of hindwing and marginal spots of forewing smaller; abdomen blackish brown above and below; underside slightly tawny in middle.

Length of forewing : ♂, 44 mm.

” ” ♀, 49 mm.

Hab. Abyssinia, recorded by Oberthür from Shoa as being found all the year round except in March and April; in the Tring Museum are specimens (received from the Genoa Museum), labelled Sciotalit, January, and Feleklek, February, 1880 (Antinori).

Dr. Butler, in his Revision of the genus *Charaxes* does not mention this peculiar form.

b. Ch. brutus somalicus Rothsch., subsp. nov.

♂. Similar to *Ch. brutus junius*, discal band of *upperside* nearly as yellow; differs *above* in the band of the forewing being narrower behind, being about as wide in *somalicus* at SM^2 as it is at M^2 in *junius*; further, in the band of the hindwing being anteriorly also narrower than in *junius*, having the greatest width at R^3 , and in the slightly thinner admarginal lunules. On the *underside* the basal area is coloured as in *brutus brutus*, the bars are, however, as grey as in *junius*, but a little broader; the postdiscal black spots of both wings are larger than in *junius*; the submarginal bars as heavy as in *brutus brutus*; submarginal interspaces more olive than in *brutus brutus*, much wider than in *brutus junius*, white discal band narrower than in the latter form; body as in *junius*.

Hab. Harrar Highlands, Somaliland, 1 ♂ in the British Museum.

c. Ch. brutus angustus.

Charaxes brutus, Druce (non Cramer, 1779), *Proc. Zool. Soc. Lond.* p. 412 (1875) (Angola); Plötz, *Stett. Ent. Zeit.* XLI. p. 194. n. 102 (1880) (Cameroons, VII. IX. x.); Dewitz, *Nor. Act. Leop. Car. Ak. Naturf.* XLI. 2. p. 371 (1887) (Mukenge); Capronn, *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 65 (1889) (Kassai); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 84 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story Rear Column* p. 440. n. 79 (1890) (Aruwimi); Sharpe, *Iris* IV. p. 58. u. 57 (1891) (Banggala); Auriv., *Ent. Tidskr.* XII. p. 215. n. 136 (1891) (Cameroons); id., *l.c.* XV. p. 310. n. 186 (1894) (Cameroons, II. XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 350. n. 1 (1896) (pt.; Cameroons; Angola); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 231. u. 1 (1899) (pt.; Congo; Banggala, Kassai, Aruwimi; Mukenge; Angola; Cameroons).

♂ ♀. Similar to *natalensis*, but differs as follows:—

Wings above with a narrow band, that of forewing measuring only $2\frac{1}{2}$ to 4 mm. before SM^2 , band of hindwing gradually decreasing in width behind; very little or no olive blue scaling along band on either wing; marginal spots of forewing vestigial or absent, the posterior ones generally absent, but sometimes all as well marked as in *natalensis*: no admarginal spots on hindwing.

Underside: bars on the whole heavier than in *natalensis*, basal area red chestnut; of the discal series of bars of the hindwing bars $C-M^1$ or $C-M^2$ absent, interspaces between white band and black postdiscal bars tawny ochraceous, while the submarginal interspaces are reddish chestnut.

Length of forewing : ♂, 42—46 mm.

 " " ♀, 47—54 mm.

Hab. Angola to Niger, gradually merging into *brutus brutus*. In the Tring Museum 18 ♂♂, 4 ♀♀ from: Congo: Leopoldville, Kassai, Upoto (*type*!), Lukolele: two and four days' march from Ft. Beni, Great Forest, May 6. 8. '99 (Dr. Ausorge): Angola; Cameroons; Old Calabar.

Our specimens of *Ch. brutus* from Rau, Nandi, Uganda Protectorate, Fajao, and Unyoro agree on the whole better with the following form than with *angustus*; the fresh specimens have the band of the *upperside* rather yellowish, somewhat like *somalicus*.

d. *Ch. brutus brutus*.

Papilio Eques Achirus brutus Cramer, *l.c.*

Papilio Eques Achirus cajus Herbst, *l.c.*

Eriboea bruta (!), Hübner, *Verz. bek. Schmett.* p. 46. n. 422 (1816-27).

Nymphalis brutius (!), Godart, *Enc. Méth.* IX. p. 351. n. 3. (1823) (Guinea).

Charaxes brutus, Doubleday, *List. Spec. Lep. Ins. Brit. Mus.* I. p. 111 (1844) (S. Leone); Butl., *Proc. Zool. Soc. Lond.* p. 625. n. 9 (1865) (S. Leone; Guinea); Staud., *Exot. Tagf.* p. 169 (1886); Mab., *Ann. Soc. Ent. Fr.* (6). X. p. 23 (1890) (Assinie); Karsch, *Ent. Nachr.* XVIII. p. 176. n. 48 (1892) (Togo); id., *Berl. Ent. Zeitschr.* XXXVIII. p. 190. n. 50 (1893) (Adeli, July to Sept.); Schaus & Clements, *Sierra Leone Lepid.* p. 8 (1893); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 350. n. 1 (1896) (pt.; S. Leone; Accra); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 231. n. 1 (1899) (pt.; S. Leone; Ashanti; Ivory Coast; Togo; Fernando Po).

Nymphalis brutus, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 5 (1850) (S. Leone; Guinea); Kirby, *Cat. Diurn. Lep.* p. 268. n. 8 (1871).

♂♀. Like *brutus angustus*, but band of forewing 5 to 8 mm. broad before SM² in ♂, 7 to 9 mm. in ♀.

There are seldom traces of pale blue admarginal spots on the hindwing.

Hab. Sierra Leone to the Niger; common. In the Tring Museum 10 ♂♂, 6 ♀♀ from: Sierra Leone; Coomassie; Accra; Manfé; O. Calabar. The specimens from Cameroons belong mostly to *angustus*, or are intermediate.

In the width of the band this form comes much nearer *natalensis* than does *angustus*, though the latter is geographically intermediate.

e. *Ch. brutus natalensis*.

Nymphalis brutus, Trimen (*non* Cramer, 1779), *Rhop. Afr. Austr.* p. 173. n. 100 (1862) (Natal).

Charaxes brutus var. Butler, *Proc. Zool. Soc. Lond.* p. 625 sub. n. 9 (1865) (Pt. Natal).

Charaxes brutus, Gooch, *Entom.* XIV. p. 6 (1881) (Natal; larva noticed); Spiller, *ibid.* XV. p. 8 (1882) (Natal); Trim. & Bowk., *S. Afr. Butt.* I. p. 335. n. 111 (1887) (pt.; Natal; Caffraria); Monteiro, *Delagoa Bay* p. 220 (1891); Butl., *Proc. Zool. Soc. Lond.* p. 253. n. 10 (1895) (Zomba); id., *l.c.* p. 720. n. 5 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 350. n. 1 (1896) (pt.; Natal; Delag. Bay; Zomba; Kilimandjaro; Taita); Dist., *Ann. Mag. N. H.* (7). I. p. 51 (1898) (Barberton).

Charaxes brutus var. *natalensis* Staudinger, *Exot. Tagf.* p. 169. (1886) (Natal); Lanz, *Iris* IX. p. 140. (1896) (Parumbira, Tanganyika, October); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 231. sub n. 1 (1899) (Kaffraria; Natal; Zambesi; Delagoa B.; Parumbira, Tanganyika).

♂. Head and pronotum deep ferruginous, abdomen beneath orange in middle, white at sides.

Wings above purplish black, band white, sometimes cream colour, obviously edged with pale blue from M² of forewing to (SM¹) of hindwing.—Forewing: band broad behind, considerably narrowing costad, 8 to 10 mm. wide at SM², 5 to 6 mm. at M², and 3 or 4 mm. between M¹ and M², two upper spots often minute, especially in Natal individuals; marginal spots distinct, white, proximally somewhat

buffish.—Hindwing: bluish border of band wide, especially proximally in and behind cell; admarginal spots cream colour, bluish at and buffish between veins, in most individuals widely interrupted between veins, but sometimes the halfmoons complete; blue submarginal dots varying in number from 2 to 5.

Underside: reddish chestnut up to median bars or almost ferruginous; discal bars R^1 — SM^2 of hindwing more or less heavily marked, often also bar SC^2 — R^1 present; postdiscal interspaces (between white band and postdiscal bars) of the same or nearly the same tint as the submarginal interspaces; wing strongly dentate, tails long and pointed.

♀. Like ♂, abdomen beneath pale orange with two black, slightly interrupted lines.

Wings, above: more brown, less deep black than in ♂, band wider than in ♂. —Forewing: band 10 to 12 mm. broad at SM^2 , the upper spots often orange distally, spots R^1 — R^2 elongate in most specimens, shorter in those from Natal than in individuals from tropical East Africa, sometimes there is a very faint vestige of the discal spots SC^4 — R^1 present in *Ch. brutus andara* ♀; marginal spots dull orange, whitish in middle at edge of wing.—Hindwing: admarginal spots seldom vestigial only, occasionally not interrupted between veins, smaller in Natal specimens than individuals from tropical E. Africa.

Underside exhibits the same distinguishing characters as ♂, tooth at M^1 comparatively shorter than in ♂.

Length of forewing: ♂, 37—45 mm.

 " " ♀, 42—50 mm.

Penis as in *andara* with a minute tooth shortly behind the subapical tooth.

Hab. East Africa, from Natal to the Tanganyika, Kilimandjaro and the coast regions of German East Africa, not found in the Cape Colony, and not yet recorded from the coast districts of British East Africa. In the Tring Museum 11 ♂♂, 14 ♀♀ from: Natal: Rikatla, Delagoa Bay; Mozambique; Dar-es-Salaam; Taveta (July); Zomba and Lauderdale, Nyassaland; Parumbira, October 22nd and November 7th (Dr. Ansorge).

The larva was discovered by Mr. Gooch. Dr. Trimen, *l.c.*, describes the caterpillar and chrysalis as follows:—

"LARVA.—Bright yellowish green (covered with minute yellow granules); second and last segments of a much duller green than the others. On each side of back a row of cuneiform yellowish marks, broad anteriorly, and deflected upward and posteriorly, narrowing to a point before hind-edge of the segment. On seventh segment a yellow-circular dorsal marking with a brown centre. Head light green; the frontal horns short and tipped with cobalt-blue,—the two outer horns shorter than the two middle ones; mandibles light blue tipped with black. (W. D. Gooch, MS. description and outline drawing of Natalian larva, 1874).

"Captain H. C. Harford, who also observed the larva in Natal, saw the ova deposited on the leaves of the Seringa (*Melia azedarach*), and noted that they were at first pale yellow, but became in a few hours reddish brown. From an egg that was watched on a leaf out of doors the larva was hatched on the eighth day after its deposit. It was brownish green, with the head and horns brown, and the caudal processes very long and curved inward. After the first moult, it was dark olive green, with a slight indication of a pale spot on the back of the seventh segment; the head being of a darker brown, but the horns lighter at the tip; while the anal processes were light ashy grey. After the second moult, it became dark green

minutely irrorated with white, and showed the whitish spot on the second segment much more distinctly; the head was larger in proportion to the body, and presented an ochreous line running along the sides and along outer edge of the horns. After the third moult, it remained of the same dark green, but the white dorsal spot was circled with light blue. (This larva does not appear to have been described by Captain Harford in its final stage.)

“PUPA.—Bright green; spiracles reddish brown ringed with white, diminishing in size towards last segment; projections of head tipped with white; some confluent white spots on wing covers. Head rather acutely bifid; thorax very convex; wings forming slight lateral projections; abdomen making a great angle at the segment in a line with apex of wing-covers, the last segment prolonged into a pedicel bearing four tubercles. (H. C. Harford, MS. notes on Natalian pupa, 1869).”

About the habits of *Ch. brutus natalensis* we learn from Dr. Trimen that he “frequently met with this fine *Charaxes* at Port Natal, and managed to capture a good many specimens at the ‘sucking places’ (on stems or branches of trees where moisture exuded) so specially attractive to butterflies of this group. On the wing, *brutus* is one of the very swiftest of Nymphalidæ, and it is difficult to follow its flight, except when it is chasing another of its species, or some competitor at the drinking stations mentioned. I noted examples in February, March, and April, and Colonel Bowker took several in August in the same locality; while in Kaffraria he had noticed the butterfly’s occurrence in March, May, and June.”

The individuals from the Tanganyika region connect *natalensis* with the West African forms.

f. *Ch. brutus andara*.

Charaxes andara Ward, *Ent. Mo. Mag.* IX. p. 209 (1873) (Madagascar); Saalm., *Lep. Mus.* p. 88, n. 128 (1884); Mab., in Graudicé, *Hist. Madag. Léop.* I. p. 187. t. 22. f. 4. 5. 6 (1887) (Tamatave; Foulepointe); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 351. n. 2 (1896) (Antananarivo; Ft. Dauphin); Auriv., *Kongl. Sr. Vet. Ak. Handl.* XXXI. 5. p. 231. n. 2 (1899) (Madag.)

♂. Edges of abdominal segments above sometimes slightly grey. *Wings above* with a violet tint; band conspicuously edged with pale blue from M² of forewing to (SM¹) of hindwing.—Forewing; band 6 to 8 mm. broad before SM² (inclusive of blue border), patch M¹—M² 3 to 4 mm. wide, spot R²—R³ generally elongate, narrow, sometimes prolonged to bar D, but its proximal portion then shaded with brown, spot R¹—R² often also elongate, spots SC¹—R¹ mostly bluish, small, often only vestigial; marginal spots white as a rule, often slightly orange proximally, in one specimen (in Mr. Grose-Smith’s collection) all orange and rather larger than usually.—Hindwing: two submarginal dots M²—SM², blue; admarginal bluish creamy white line seldom continuous, mostly very widely interrupted between veins, there remaining only triangular spots at the ends of the veins, these spots extending into tails, anal admarginal spot, however, linear and transverse, bluish olive; discal band stopping at (SM¹).

Underside rufous red from base to discal band, bars without grey centres.—Forewing: cell-bar 3 somewhat rounded, 4 rather slender, as is bar D; median bars SC³—R² also slender, bars SC⁵—R² each very much longer than broad (a part of white border) discal bars SC¹—R¹ dark olive; outer area of wing from white band to margin tawny ochraceous; black postdiscal patches R¹—M¹ rather smaller than in the continental forms, less pointed.—Hindwing: basal costal bar not touching white costal edge, often rounded, almost circular, white band posteriorly as well as anteriorly with brown spots or vestiges of such; interspace between white discal

band and black postdiscal bars cinnamon rufous, as a rule darker than basal area ; postdiscal bars C—M² transverse, not or slightly curved, rather thin, not dilated in middle, edged olive distally ; submarginal interspace chestnut, seldom rufous chestnut, much wider than in the other forms, bar R¹—R² 5 mm. distant from submarginal bar, much shaded with white distally, interspaces M¹—SM² olive, with blue and white submarginal dots ; submarginal bars blackish olive, transverse, linear ; wing more heavily dentate than in the continental forms, tail R³ 7 to 8 mm. long, tail M¹ 3 to 5 mm., tail M² 6½ to 7½ mm.

♀. *Wings above* less bluish than in ♂.—Forewing : costal margin more or less tawny ; band pale orange, white from M² backwards, posteriorly edged with pale blue at both sides, but especially proximally, 10 mm. broad at SM², patch R³—M¹ 7 mm. long, oblique proximally, patch R²—R³ extended to bar D, patch R¹—R² about twice as long as broad, with two discal spots in front, besides the two rounded postdiscal spots SC⁴—R¹, discal spot SC⁵—R¹ rather larger, produced distad along R¹ and mostly joined to the postdiscal spot, discal spot SC⁴—SC⁵ linear, an orange streak also in front of SC⁴ ; marginal spots pale orange.—Hindwing : band broadly bordered with bluish white proximally, basal half of abdominal fold also milky white, pale blue distal border of band gradually narrowing costad ; blue submarginal dots M²—SM² heavy, fused together as a rule, dot M¹—M² often present ; admarginal line orange between, creamy buff or bluish at veins, nearly continuous, or interrupted at the veins, often obsolete from C to R¹, anal portion as in ♂, but wider.

Underside : as in ♂, but submarginal area of hindwing more olive and white, the chestnut scaling very much reduced, sometimes almost entirely replaced by olive and white ; tails and teeth as in ♂, rather broader at base and longer.

Length of forewing : ♂, 34—41 mm.

” ” ♀, 42—46 mm.

Penis sometimes with a second, very small, tooth situated behind the ordinary tooth present in all forms of *brutus*, agreeing with that of *natalensis*.

Hab. Madagascar, apparently all over the island in suitable localities ; a forest insect. In the Tring Museum 8 ♂♂, 2 ♀♀, partly from Morondava.

The *female* is very different from those of the continental *brutus* on account of the development of the discal interstitial patches of the forewing above ; this conspicuous difference, however, does not justify specific separation, because traces of the discal parts of those patches are found also in continental *females*.

♂. Black postdiscal bars of hindwing below absent, or represented by elongate triangular, longitudinal spots, their grey distal borders present, upper ones long, curved proximally towards the veins, the lines in the same cellule forming distally an acute angle, but do not always reach one another.

k¹. Bars in basal half of underside all black, not centred grey.

58. *Charaxes castor*.

Papilio Eques Achirus castor Cramer, *Pap. Exot.* I. p. 61. t. 37. f. c. d. (1775) (Guinea).

Papilio Eques Achirus pollux, Fabricius (non Cramer, 1775), *Gen. Ins.* p. 251 (1776).

♂♀. *Body above* olive, with a faint russet tint anteriorly, white dots on head more or less obvious, line behind eye conspicuous ; *underside* olive black, faintly russet ; palpi with a very broad white stripe, breast obliquely striped buffish white,

segments of abdomen edged white, this colour laterally fused to a streak, forelegs black above, white beneath, other legs black, densely scaled buffish white, except upperside of femora.

♂. *Wings above* purplish black, base of hindwing more sepia colour, base of forewing occasionally faintly chocolate.—Forewing : elongate, median bars often vestigial in side-light, cell occasionally with one or two ochraceous buff dots at the distal and proximal edge respectively of the large cell-bar 4, corresponding to the anterior portions of the apical and subapical interspaces of the cell below ; a band of discal interstitial spots from SC^5 to internal margin, pale ochraceous or buff, the band widely interrupted at R^2 , the two upper spots being more distal than the other patches which stand in a straight row, last three patches up to M^2 continuous (vein SM^2 , however, thinly black), 4 to 7 mm. broad before SM^2 , patch M^1-M^2 narrower, somewhat halfmoon-shaped, more distal, patch R^3-M^1 again narrower, halfmoon-shaped, again more distal, spot R^2-R^3 much smaller, elongate, just in front of patch R^3-M^1 , 4 to 6 mm. from cell, spots SC^5-R^2 smaller, nearly square, the upper of the two somewhat oblique, the second slightly concave proximally and often also concave distally ; this band of patches is followed by a postdiscal series of six interstitial spots of the same colour, the series slightly curved, uppermost spot the largest, subrotundate, or proximally concave, 6 or 7 mm. from outer margin, about 3 mm. wide, the others gradually approaching discal patches, spot R^3-M^1 often, spot M^1-M^2 always touching discal patches at veins M^1 and M^2 respectively, halfmoon-shaped, sometimes these last two spots fused with the discal patches at both ends, thus entirely isolating the respective black postdiscal spots ; fringe thinly, white between veins ; marginal internervular spots, if present, minute, creamy white.—Hindwing : median bars $C-R^1$ seldom separated from the black basal area by some creamy buff scaling ; a triangular ochraceous buff or pale buff band, nearly white at costal margin, seldom reaching M^2 , often much shortened, 5 to 8 mm. broad at SC^2 , externally sinuate at SC^2 and R^1 in many specimens, the outer edge of band at R^3 very little distal of, or just at base of M^1 ; apex of cell often shaded with creamy buff ; four or five blue submarginal dots, the last two fused, with white centres ; a series of admarginal interstitial spots, upper one or two ochraceous, the following more or less pale blue, often creamy at veins, last one or two greenish olive buff, spot $C-SC^2$ generally triangular, the others transverse, mostly produced distad at veins, narrowed or interrupted at internervular folds, spot SC^2-M^2 thinner between veins than the black marginal line ; fringe conspicuously white between veins.—*Underside* : basal area chestnut or black, with intergradations, black bars very heavy, nearly the same in position as in *Ch. pelias*, *jason*, *epijanius* and *hansali*, white borders of bars heavy.—Forewing : cell-bar 3 ovate ; bar D widened in front ; submedian and median bars M^1-SC^2 close together, mostly fused or joined together, median bar R^2-R^3 separated from bar D by the white border line, median bars SC^4-R^2 fused to a broad band which is narrowest costally ; black discal spots SC^5-M^2 placed as in the allied species, upper two much larger than the others, discal interspaces creamy white, interspace SC^5-R^1 generally with an ochraceous spot ; postdiscal interstitial band yellow ochraceous or buff, posterior patches transverse, often luniform, upper ones more rounded, touching the black discal spots or being separated from them by white scaling ; black postdiscal patches heavy, rounded distally, patches M^2-SM^2 not separated or incised at (SM^1), but faintly emarginate distally, as is patch M^1-M^2 in many specimens, the patches bordered distally, seldom also proximally (the last ones always

excepted), with olive grey, this scaling forming generally a kind of bracket], being externally limited by a series of thin, black, submarginal bars, which mostly curve basad at ends : veins olive grey near ends, but black at edge of wing, white internervular marginal dots minute, or as large as the black transverse spots at ends of veins.—Hindwing : median bars somewhat more proximal than in the allied species, except *Ch. hansali*, basal costal bar less S-shaped than in *hansali* ; white discal interstitial band widest in front, variable in width ; of the discal series of bars only bars M^1 — SM^3 and R^2 — R^3 present ; postdiscal interstitial band chestnut, very broad, seldom less broad than the submarginal interspaces, mostly slightly separated into patches by the thinly grey veins, the band proximally situated between R^2 and R^3 , patches R^3 — M^2 generally rounded proximally, the band continued to abdominal margin by a pale ochreous uniform patch of nearly even width ; black postdiscal bars inconspicuous, bordered externally by grey lines which form, as in the allied species, acute angles upon and between the veins, lines touching SC^2 and R^1 long ; submarginal black bars transverse, bars M^1 — SM^2 or R^3 — SM^2 larger, submarginal interspaces olive, interspace M^2 — SM^2 large, upper ones more or less heavily shaded with bluish grey, blue and white submarginal dots obvious, except upper ones ; admarginal interspaces pale ochreous, slightly edged with pale blue, especially at veins ; black marginal line often heavier than the admarginal interspaces, broadest between veins as a rule ; edge of wing obviously dentate, two tails, upper one acute, 4 to 7 mm. long, second of nearly even width, 6 to 9 mm. long.

♀. Larger than ♂, paler, the discal interstitial band of the wing above on the whole wider, tails longer, the second or both slightly spatulate and curving a little frontad.

Length of forewing : ♂, 44—53 mm.

“ “ ♀, 51—61 mm.

Sexual armature similar to that of *Ch. jason* ; penis with a few minute teeth immediately behind the heavy subapical tooth.

Hab. A common species in tropical Africa, not found in Cape Colony and Natal, replaced in Abyssinia by *Ch. hansali*.

a. *Ch. castor flavifasciatus*.

Charaxes hansali var., Standinger, *Exot. Tugf.* p. 168 (1886) (Zanzibar, mainland).

Charaxes castor, Trimen & Bowk., *S. Afr. Butt.* I. p. 338. n. 112 (1887) ; *id.*, *l.c.* III. p. 407 (1889) (Barberton) ; Pagenst., *Jahrb. Wissensch. Anst. Hamburg.* X. 2. p. 26. n. 53 (1893) (E. Ungu, IX.) ; Trimen, *Proc. Zool. Soc. Lond.* p. 41. n. 53 (1894) (Manica) ; Holland, *Proc. U. States Nat. Mus.* XVIII. p. 262 (1895) (Somaliland) ; Sharpe, *Proc. Zool. Soc. Lond.* p. 533. n. 33. (1896) (Darro Mts., Somaliland, XI.) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 353. n. 10 (1896) (pt. ; Tanganyika ; Mambaia).

Charaxes hansali, Butler (non Felder, 1867), *Ann. Mag. N. H.* (6). VII. p. 42. n. 9 (1891) (Kandere and Nguru, Germ. E. Afr., Oct. Nov.).

Charaxes castor Crann. var. *flavifasciatus* Butler, *Proc. Zool. Soc. Lond.* p. 251. n. 5 (1895) (Zomba) ; *id.*, *l.c.* p. 852. n. 9 (1896) (Nyassaland) ; *id.*, *Journ. Linn. Soc. Lond.* XXV. p. 353. n. 10 (1896) (pt. ; Del. Bay ; Zomba ; Zambesi ; Centr. Afr. ; “Upp. Egypt” loc. err. ? *an hansali* ?) ; Auriv., *Kongl. Sc. l'et. Ak. Handl.* XXXI. 5. p. 232. sub n. 4 (1899) (Del. Bay ; Zambesi ; Manica ; Nyassa ; Parumbira ; Brit. E. Afr.).

Charaxes flavifasciatus Butler, *Ann. Mag. N. H.* (6). XVIII. p. 68. n. 2 (1896) (Nyassaland).

Charaxes castor var. *orientalis* Stand. (*sic!*), Lanz, *Iris* IX. p. 140 (1896) (Parumbira, Oct.).

♂ ♀. *Wings above* : discal band pale buff yellow, seldom of the same ochraceous tint as in the western form.—*Forewing* : marginal internervular buffish white

spots present, seldom only vestigial; basal area in most individuals rather paler, cell-bar 4 often vestigial, not rarely bordered by two pale buff spots; some individuals, especially ♀♀, have a vestige of a pale buff spot before the base of R¹.—Hindwing: submarginal interstitial lunules mostly not interrupted at internervular folds in ♂.

Underside: interspaces in basal area chestnut, very seldom black, bars rather thinner than in the west coast form.—Forewing: postdiscal pale ochraceous spots not touching black discal spots; marginal white spots conspicuous.—Hindwing: chestnut band on the whole less broad than in *castor castor*, more deeply sinuate distally at C, SC², and R¹, the sinus sometimes extending to near proximal edge of this band; submarginal bars and marginal line rather thinner than in *castor castor*, hence pale yellow admarginal interspaces larger.

*a*¹. **Ch. castor flavifasciatus f. flavifasciatus.**

Interspaces of basal half of *underside* chestnut.

This is the ordinary East African form.

*b*¹. **Ch. castor flavifasciatus f. reimeri** Rothsch., nov.

Interspaces of basal half of *underside* black. *Type* from Dar-es-Salaam.

This form is very rare.

In a gynandromorphous individual in the Tring Museum from Mikindani, German E. Africa, collected by Herr Reimer, the interspaces of the basal area of the *underside* are chestnut on the ♂-wings, black on the ♀-wings.

Hab. East Africa, from Nyassaland and Delagoa Bay to Somaliland. In the Tring Museum 18 ♂♂, 8 ♀♀ from: Delagoa Bay; Likoma, Nyassa, vi. vii.; Zomba, December 1895 (Dr. P. Rendall); Parumbira, October (Dr. Ansorge); Mikindani; Lindi; Taveta, vi. vii. '90; Dar-es-Salaam.

b. **Ch. castor castor.**

Papilio Eques Achirus castor Cramer, *l.c.*

Papilio Eques Achirus pollux, Fabricius (non Cramer, 1775), *Gen. Ins.* p. 251 (1776); Goeze, *Ent. Beytr.* III. 1. p. 75. n. 17 (1779); Fabr., *Spec. Ins.* II. p. 11. n. 45 (1781); id., *Mant. Ins.* II. p. 6. n. 49 (1787); Herbst, *Naturs. Schmett.* IV. p. 60. n. 152. t. 63. f. 3. 4 (1790); Gmelin, *Syst. Nat.* I. 5. p. 2235. n. 302 (1790).

Papilio Nymphalis pollux, Fabricius, *Ent. Syst.* III. 1. p. 63. n. 197 (1793).

Eriboea castoris (1), Hübner, *Verz. bek. Schmett.* p. 47. n. 426 (1816-27).

Nymphalis pollux, Godart, *Enc. Méth.* IX. p. 352. n. 5 (1823) (Ginea); Lucaš, *Lep. Ex.* p. 119. t. 62. f. 1 (1835) (Guinea); Donbl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 4 (1850); Kirby, *Cat. Diurn. Lep.* p. 267. n. 3. (1871) (pt.).

Charaxes pollux, Doubleday, *List Spec. Lep. Ins. Brit. Mus.* I. p. 110 (1844) (Asbanti); Feisth., *Ann. Soc. Ent. Fr.* p. 255. n. 8. t. 9. f. 1. ♀ (1850) (Senegal); Butl., *Proc. Zool. Soc. Lond.* p. 623. n. 3. (1865) (Ashanti; Guinea).

Charaxes castor, Butler, *Cat. Diurn. Lep. descr. Fabr.* p. 53. n. 15 (1869) (S. Leone); Druce, *Proc. Zool. Soc. Lond.* p. 412 (1875) (Angola); Staud., *Exot. Tagf.* p. 168 (1886) (Senegal, Cameroons, Fernando Po); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 146. n. 75 (1889) (Gaboos); Mab., *Ann. Soc. Ent. Pr.* (6). X. p. 23 (1890) (Assinie); Möschb., *Abh. Senk. Ges.* XV. p. 61 (1890) (Aburi); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 83 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story of Rear Column* p. 439. n. 78 (1890) (Aruwimi); Auriv., *Ent. Tidsskr.* XII. p. 214. n. 135 (1891) (Cameroons); Karsch, *Ent. Nachr.* XVIII. p. 176. n. 51 (1892) (Togo); id., *Berl. Ent. Zeitschr.* XXXVIII. p. 187. n. 51 (1893) (Adeli); Anriv., *l.c.* XV. p. 309. n. 184 (1894) (Cameroons, IV. XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 353. n. 10 (1896) (pt.; S. Leone; Ashanti; O. Calabar; Cameroons; Angola; Fernando Po); Auriv., *Kongl. Se.*

Vet. Ak. Handl. XXXI. 5. p. 232. n. 4 (1899) (Senegal ; S. Leone ; Ivory Coast ; Ashanti ; Togo ; Cameroons ; Congo).

Nymphalis castor, Kirby, *l.c.* p. 267. n. 7. (1871) (pt.) ; Dewitz, *Nor. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 8. 28 (1879) (N. Angola).

Charaxes castor var. *flavifasciatus*, Butler, *l.c.* (pt. : Accra).

♂ ♀. *Wings above* : band pale ochraceous.—Forewing : marginal spots absent or vestigial, the white scaling generally restricted to the fringe.—Hindwing : posterior admarginal, pale blue, spots interrupted as a rule.

Underside : interspaces in basal area varying from black to chestnut.—Forewing : orange ochraceous postdiscal patches deeper in tint than in *flavifasciatus*, in most specimens touching the black discal spots ; black, submarginal, bracket-shaped bars heavier than in the eastern form ; white marginal dots minute.—Hindwing : postdiscal chestnut band less deeply triangularly sinuate externally at veins than in *flavifasciatus*, the sinus less pointed ; black admarginal line as wide as, or wider than, admarginal interspaces.

c¹. *Ch. castor castor* f. *castor*.

Interspaces in basal area of *underside* chestnut or deep cinnamon rufous.—This form is comparatively rare. A *female* from Warri with short, non-spatulate tails, has the rufous chestnut band of the *underside* of the hindwing very narrow, the patches composing the band are, in fact, smaller than the respective submarginal interspaces, patch R¹—R² (for instance) measuring 3 to 4 mm. in width.

d¹. *Ch. castor castor* f. *godarti*.

Charaxes castor var. et ab. *godarti* Aurivillius, *l.c.*

Interspaces in basal area of *underside* black.—This is the usual West African form.

Hab. Senegambia to Angola, Upper Congo, Unyoro, Uganda as far east as the Nandi country. In the Tring Museum 20 ♂♂, 10 ♀♀ from : Sierra Leone ; Gold Coast ; Warri, Niger, January and July (Dr. Roth) ; Cameroons ; Congo : Stanley Pool to Lukolele, Bopoto, Kassai ; Fajao, Unyoro, 22. vii. '97 (Dr. Ansonge) ; Patsbo, Nandi country, Uganda Protectorate, 11. xii. '96, and Ran, Nandi country, 14. iii. '98 (Dr. Ansonge).

Why Prof. Aurivillius calls the form *godarti* "var. et ab." we do not understand ; the name of the West African "var.," = subspecies = geographical race, is *Ch. castor castor* ; *godarti* is one of the two forms of this dichromatic subspecies.

^h. Bars in basal half of *underside* with greyish olive centres.

ⁱ. Upperside with a broad maize yellow or orange band across both wings.

^j. Discal interstitial band of upperside maize yellow.

59. *Charaxes hansali*.

Charaxes hansali Felder, *Reise Novara, Lep.* p. 446. n. 728. t. 59. f. 3. 4 (1867) (Bogos) ; Oberth., *Ann. Mus. Civ. Genova* XV. p. 166. n. 46 and p. 184. n. 25 (1879) (Shoa, July, Aug.) ; id., *l.c.* XVIII. p. 727. n. 57. (1883) (Ambo-Karra, VIII.) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 353. n. 9 (1896) (Bogos, Abyssinia) ; Sharpe, *Proc. Zool. Soc. Lond.* p. 370. n. 12 (1898) (Somaliland, Wagga, 6000 ft., Feb.) ; Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 233. n. 6 (1899) (Bogos ; Somaliland).

Nymphalis hansali, Kirby, *Cat. Diurn. Lep.* p. 267. n. 5. (1871) (Bogos).

♂ ♀. *Body above* olivaceous russet, abdomen russet olive ; dot before antenna and line behind eye conspicuous ; *underside* as in *pelias*, red brown stripes less bright,

hazel colour, abdomen white, with a rather narrow brown median line, ventral edge of palpi brown.

♂. *Wings* similar in pattern and shape to those of *Ch. pelias saturnus*.

Upperside brownish black, purplish, basal area russet or sepia colour, discal band, postdiscal and admarginal spots maize yellow.—Forewing: cell-bar 3 vestigial, 4 mostly large and fused with bar D and the series of median bars, the russet or sepia colour stopping midway between M^2 and M^1 ; median bars M^1 — SM^2 ill-defined proximally, continuous, bar R^3 — M^1 about 3 mm. more distal, continuous with bar R^2 — R^3 , bars SC^5 — R^2 again about 4 mm. more distal, also fused together, the whole area between these median bars and cell-bar 4 more or less uniformly black, the proximal limits of the median bars SC^5 — M^1 being generally vestigial only in side-light; on account of the position of the median bars the yellow discal band consists of three portions, which are again divided by the veins, last portion about 6 mm. broad, portion R^1 — M^1 4 mm., portion SC^{15} — R^1 (sometimes with a streak before SC^5) 3 mm. broad and scarcely touching portion R^1 — M^1 , concave proximally; the discal bars SC^4 — M^1 are fused together and joined along veins to postdisco-marginal area, hence the yellow postdiscal interspaces reduced to a series of spots of which spots R^1 — M^1 are minute or just traceable, while spot SC^4 — SC^5 is 2 to 4 mm. long and $1\frac{1}{2}$ to 2 mm. broad; marginal spots, especially the middle ones, less extending proximad than in *pelias*.—Hindwing: discal band extending to M^2 , somewhat narrowing behind, basal area shaded at band with maize yellow scales, median bar C — SC^2 visible; abdominal fold grey, brown median bars M^2 — SM^3 often vestigial, separating a triangular patch near anal angle from rest of abdominal fold, outer edge of band slightly concave from C to R^3 , often rounded-sinuate between R^3 and M^1 , M^1 and M^2 , crossing R at bent of this vein and M^1 4 to 5 mm. from its base; 3 to 5 blue submarginal spots, last two fused together; series of admarginal, maize yellow, interspaces complete, the interspaces separated, about as thick as the black marginal line, transverse, anal one greenish.

Underside hazel, much less bright red than in *Ch. pelias*, postdiscal band of interstitial patches of about the same colour as the basal area, discal band creamy, bars in basal area as in *Ch. pelias saturnus*.—Forewing: olive black, discal spots SC^4 — M^2 as in *saturnus*, postdiscal interstitial patches gradually smaller towards SC^4 , the upper patches not larger than the respective black discal spots, the white interspaces at their proximal side about as large as those patches, much larger than in *Ch. pelias*; black postdiscal spots as in *saturnus*; marginal interspaces creamy white at edge of wing.—Hindwing: median bars rather heavier than submedian ones, submedian longitudinal bar M^2 —(SM^1) joined to short median bar M^2 —(SM^1); discal bar R^2 — R^3 heavy, discal bar M^1 — M^2 present as a thin line; no red brown patch before C at outer side of costal median bar; postdiscal hazel-coloured band narrower than in *saturnus*, the grey angles less conspicuous; postdiscal black bars C — R^2 represented by longitudinal spots; nearly all the blue submarginal dots marked; admarginal interspaces as wide as in ordinary *saturnus*, creamy white, greenish buff proximally, upper ones somewhat ochraceous, anal one greenish buff; dentition of wing as in *Ch. pelias saturnus*, upper tail 5 to 6 mm. long, second 8 to 9 mm.

♀. Like ♂, larger, postdiscal interstitial spots R^1 — M^2 of the upperside of the forewing larger; upper tail 11 mm., second 12 mm.

Length of forewing: ♂, 41—43 mm.

” ” ♀, 50 mm.

Penis similar in shape to that of *Ch. pelias*; besides the subapical tooth, which is strong, there is farther back a series of teeth of which the three last ones are dorsal, the others sinistro-lateral.

Hab. Abyssinia; Bogos and Shoa; the mountainous parts of Somaliland bordering on Abyssinia. In the Tring Museum 4 ♂♂, 1 ♀.

♀. Discal interstitial band of upperside ochraceous to orange.

60. *Charaxes pelias*.

Papilio Eques Achirus pelias Cramer, *Pap. Exot.* I. p. 5. t. 3. f. c. D (1775) (Cap. b. sp.).

Papilio Eques Achirus castor, Fabricius, *Gen. Ins.* p. 251. n. 30—31 (1776) (pt.).

Papilio Eques Achirus pollux, Gmelin, *Syst. Nat.* I. 5. p. 2235. n. 302 (1790) (pt.).

♂♀. *Body above* ochraceous tawny, head and pronotum more tawny, dots on head obsolete, white line behind eye conspicuous; *beneath* dirty white, white stripe on palpi very broad, the ventral tawny or brown line reduced basally to a few scales, third segment black, second segment often with black or deep brown scales in apical half along white stripe; breast with oblique, dirty white, black and tawny stripes; anterior legs black above, white beneath; abdomen white beneath, bases of segments more or less extended fulvous or brownish black.

♂. *Wings above* basal area varying from tawny ochraceous to blackish brown.—Forewing: cell-bar 3 sometimes vestigial, 4 heavy; no submedian bars; median bars R^3 — SM^2 in a nearly straight row, bar R^3 — M^1 , however, a little more distal, bars R^3 — M^2 very heavy, patch-like, straight or slightly concave distally, bar R^2 — R^3 fused with bar D to a hammer-shaped mark, bars SC^1 — R^2 large, fused together, bar R^1 — R^2 produced basad to near bar D; discal interspaces forming a pale ochraceous band which is 5 or 6 mm. wide at SM^2 , of nearly the same width up to R^3 , broken at R^2 , the portion SC^1 — R^2 being more distal than the main part of the band; the band limited distally by a series of discal bars extending from SC^1 to M^2 , the upper two bars larger than the others, fused together, the three or four posterior ones often halfmoon-shaped, bar M^2 —(SM^1) sometimes vestigial; black postdisco-marginal band proximally regularly sinuate between the veins from SC^1 to M^2 , the black scaling extending basad along these veins, including a series of ochraceous admarginal interspaces which vary very much in size, and are at least as wide as, generally much wider than, the black scaling at the veins which separates them, the interspaces M^2 — SM^2 often not separated.—Hindwing: a triangular, pale ochraceous, discal band from costal margin to M^1 or M^2 , anteriorly whitish buff, its inner edge reaching M^1 at base of this vein; abdominal margin of wing grey, abdominal fold brownish grey; disco-submarginal area black; pale blue submarginal spots conspicuous, the posterior ones largest, the series generally not extending costad beyond R^3 , but occasionally reaching SC^2 ; admarginal interspaces halfmoon-shaped, upper ones pale ochraceous, the others creamy white, shaded with ochraceous at internervular folds, anal one olive buff, somewhat greenish or yellowish, size of these spots very variable, the spots sometimes touching each other, rounded triangular, nearly as in *Ch. jason*, while in other individuals the spots are widely separated and not thicker than the black marginal line.

Underside reddish cinnamon rufous or chestnut, postdiscal and admarginal interspaces of forewing and upper admarginal ones of hindwing ochraceous, discal band white; basal to median bars black with centres olive grey, edged with white.—Forewing: costal edge in basal half olive grey; cell-bars 2 and 3

rounded at ends, bar 4 inclusive white border at least as broad as apical interspace of cell; submedian and median bars M^1 — SM^2 close together, mostly merged together, median bar R^3 — M^1 about $2\frac{1}{2}$ mm. from base of M^1 , bar R^2 — R^3 just in front of it, separated from bar D, which latter is much wider in front than behind, or touching it, bars SC^4 — R^2 fused to a short broad band, which is only 5 mm. from base of R^2 and measures 3 mm. in width (incl. white border); white discal band generally with a rufous ochraceous spot between SC^5 and R^1 , often with a smaller spot before SC^5 and a third before R^3 ; at the outer edge of the band stands a series of olive black spots SC^4 — M^2 representing the discal bars, the band divided by the veins into square patches from R^3 to SM^2 ; postdiscal ochraceous interspaces triangular, or partly halfmoon-shaped, touching with tips the postdiscal black spots of which the last ones are large and the upper ones sometimes absent, these spots rounded distally, concave or straight proximally, interspaces between them and submarginal interspaces all olive grey, this scaling often slightly glossy at edges of spots, forming a ring or half-ring round the spots; admarginal interspaces as above separated by olive grey scaling which changes into black scaling at extremities of veins.—Hindwing: basal costal bar long, reaching from base of C to end of PC, curving distad at end, often distinctly S-shaped; no subbasal bar C— SC^2 ; costal submedian bar oblique, posteriorly close to PC, bar C— SC^2 a little more distal, touching SC^2 just between cell-bars 2 and 4; submedian bar M^2 — SM^1 beginning just before point of origin of M^2 , longitudinal; median bars C— M^2 almost continuous, costal bar more proximal, with a brown red spot at outside, bar R^2 — R^3 fused with bar D (or absent?), bar R^3 — M^1 absent, bar M^2 —(SM^1) much more distal, about 10 mm. from base of M^2 , close to discal abdominal bar; black lines upon abdominal fold inclusive white borders wider than their brown red interspaces; white discal band broadest at C, gradually narrowing to M^2 , the white interspace at abdominal margin between transverse median and discal bars joined to the band; besides the discal bars beyond M^2 , which are fused to one line, there is a short and heavy bar R^2 — R^3 at outer edge of band; postdiscal brown red interspaces triangular, pointing distad, except interspace M^1 — M^2 , bordered by olive grey lines distally which form acute angles upon and between veins; postdiscal bars represented by olive scaling at the distal points of these angles, but bar M^2 — SM^2 black; last postdiscal interspaces M^2 — SM^2 pale ochreous, forming one long narrow halfmoon; submarginal bars transverse, black, rather thin, separate, last three or four somewhat uniform, being concave proximally, last two fused together, all the submarginal bars with blue or bluish scaling at proximal side, this scaling more blue and more extending between R^3 and SM^2 , with minute white submarginal dots; admarginal interspaces more or less ochraceous, with creamy white scaling at veins, posterior interspaces more greenish than yellow, anal one greenish olive buff, sometimes the ochraceous colour reduced to subrotundate spots; two tails, second longer than first.

♀. Like ♂, larger, disco-postdiscal band of upperside paler, basal area less bright, upper tail comparatively longer; abdomen below brown in middle, edges of segment white, this scaling widened at sides.

Length of forewing: ♂, 38—46 mm.

” ” ♀, 42—49 mm.

Genital armature as in *Ch. jason*.

Hab. Cape Colony northward to the Congo, the Victoria Nyanza and the Coast regions of Brit. E. Africa.

a. *Ch. pelias saturnus* (Nov. Zool. VII. t. 12. f. 2. ♂).

Charaxes jusius var., Bertolini, *Mem. Ac. Sc. Bologna* II. p. 5. n. 1 (Separat.!) (1851) (Mozambique).
Nymphalis pelias, Trimen (non Cramer, 1775), *Rhop. Afr. Austr.* I. p. 175. n. 101 (1862)
 (Damaraland); Kirby, *Cat. Diurn. Lep.* p. 267. n. 4 (1871) (pt.).

Charaxes saturnus Butler, *Proc. Zool. Soc. Lond.* p. 624. n. 5. t. 36. f. 1. ♂ (1865) (Inter. of S. Afr.):
 id., *Lep. Erot.* p. 5. t. 2. f. 2. ♀ (1869) (♀, Congo; Zambesi); Druce, *Proc. Zool. Soc. Lond.* p. 412. n. 2. (1875) (Angola); Auriv., *Öfvers. Vet. Ak. Förl.* XXXVI. 7. p. 41 (1879)
 (Damaraland); Spiller, *Entom.* XV. p. 8 (1882) (Natal); Butl., *Ann. Mag. N. H.* (5). XII.
 p. 101 (1883) (Vict. Nyanza); Dewitz, *Nor. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371 (1887)
 (Lumami R., II. III. V. VIII.); Trim. & Bowk., *S. Afr. Butt.* I. p. 334. n. 110 (1887) (Natal;
 Transvaal); Trim., *Proc. Zool. Soc. Lond.* p. 80. n. 34 (1891) (Omrora, VIII.; Ebanda, IX.);
 Hamps., *Ann. Mag. N. H.* (6). VII. p. 189 (1891) (Sabaki R.); Butl., *Proc. Zool. Soc. Lond.*
 p. 647. n. 16 (1893) (Nyassaland, I.); Trim., *ibid.* p. 41. n. 62 (1894) (Manica); Butl., *ibid.* p. 251.
 n. 6. (1895) (Zomba); id., *l.c.* p. 720. n. 8 (1895) (Zomba); Holl., *Proc. U. St. Nat. Mus.*
 XVIII. p. 753. (1895) (Brit. E. Afr.); Butl., *Ann. Mag. N. H.* (6). XVIII. p. 68. n. 3 (1896)
 (Deep Bay, Nyassa, II.); Lanz, *Iris* IX. p. 140 (1896) (Tanganyika); Butl., *Journ. Linn. Soc.*
Lond. XXV. p. 354. n. 11 (1896) (Congo; Angola; Tanganyika; Zomba; Taita; Zambesi;
 Delagoa B.; Matabele; Durban; Damaraland); Dist., *Ann. Mag. N. H.* (7). I. p. 51 (1898)
 (Pretoria, II. XII.; Rustenburg, XII.); Butl., *Proc. Zool. Soc. Lond.* p. 188. n. 9. p. 904. n. 6.
 (1898) (Masbionaland).

Nymphalis saturnus, Dewitz, *l.c.* XLI. 2. 2. p. 828 (1879) (N. Angola).

Charaxes pelias, Vollenh., *Tijdschr. v. Ent.* XV. p. 15. n. 6. (1872) (Lower Guinea); Gooch, *Entom.*
 XIV. p. 6 (1881) (Natal); Westwood, in Oates, *Matabeleland* ed. II. p. 349. n. 43. (1881)
 (Seruli R., VIII.; Victoria Falls, I.); Staud., *Erot. Tagf.* t. 58. ♂ (1886) (Transvaal).

Charaxes pelias var. *saturnus*, Staudinger, *l.c.* p. 168 (1886) (Transvaal; Congo); Reb. & Rog., in
 Baumann, *Massailand* p. 332. n. 96 (1894) (Ussui & Ussure, Germ. E. Afr.); Auriv., *Konigl.*
Sr. Vet. Ak. Handl. XXXI. 5. p. 232. sub n. 5 (1899) (Congo to Damaraland, Natal northward
 to Brit. E. Afr.).

♂ ♀. *Wings, above*.—Forewing: postdiscal ochraceous interspace SC^1-SC^5
 at least 4 mm. long, the other postdiscal interspaces also larger than the black
 discal bars at their proximal side.—Hindwing: obviously triangular, admarginal
 interspaces R^1-R^3 thicker than, or as thick as, the black marginal line.

Underside reddish cinnamon rufous.—Forewing: postdiscal ochraceous spots
 large, triangular, very much larger than the black discal and postdiscal spots
 SC^1-M^2 , postdisco-submarginal olive grey scaling pale bluish in side-light.—
 Hindwing: costal bars separate, at least basal costal bar not joined to the
 submedian and median costal bars; brown red interspaces upon abdominal fold
 as wide as, or wider than, the olive black lines (white borders excluded); postdiscal
 brown red patches R^2-M^2 as wide as the respective partitions of the white discal
 band or even wider; ochreous spots in admarginal interspaces extended, expanded
 between veins; dentition of wing acute, tails slender and long, in ♂ upper one
 4 to 6 mm., second 9 to 10 mm., in ♀ longer.

In the ordinary form the admarginal interspaces SC^2-R^3 of the hindwing
 above measure about 2 to 3 mm. in a basi-distal direction.

The following two forms deviate from the normal in a remarkable way:

a¹. *Ch. pelias saturnus* ab. (loc.?) *laticinctus*.

Charaxes saturnus var. *laticinctus* Butler, *Proc. Zool. Soc. Lond.* p. 252. sub n. 6 (1895) (Kondeland);
 id., *l.c.* p. 822. n. 9 (1896) (Vuwa, west coast of L. Nyassa, VIII.); id., *l.c.* p. 851. 852. n. 10
 (1896) (Nyassaland).

The admarginal interspaces of the hindwing about as wide as in *Ch. jason*.

This form seems to be found especially often in Nyassaland, but apparently

occurs also farther north and east, there being an example from Mpwapwa in the Berlin Museum which comes very near typical *lutieinctus*.

♂. **Ch. pelias saturnus** ab. (loc.?) **brunnesceus** Rothschi., ab. nov.

The basal area of the wings *above* brownish black, more chocolate near base, disco-postdiscal band deeper yellow than in ordinary *saturnus*, the admarginal spots of the forewing small and much shaded with brown, much darker than the postdiscal interspaces both above and below, hindwing rather shorter than in ordinary *saturnus*, the admarginal interspaces larger than in *pelias pelias*, but not thicker than the heavy, black, marginal line, interspaces R²—M² shaded with blue; discal band of hindwing scarcely reaching R³, only 4 mm. wide at SC². On *underside* the white discal band of the hindwing is narrower than in ordinary *saturnus*, and the black marginal line is heavier.

This form, which resembles somewhat *pelias pelias*, occurs in northern Angola.

Hab. *Ch. pelias saturnus* occurs from Natal to the Congo, Victoria Nyanza, and the coast regions of British East Africa; it is a rather common species in Nyassaland. In the Tring Museum 31 ♂♂, 6 ♀♀ from: Natal; Delagoa Bay; Likoma, Nyassaland, caught in June, July, August (Rev. Dutton); Bandawe, Nyassaland, March (Watkinson); Parumbira, October (Dr. Ausorge); Mombasa; Angola; Congo. A specimen said to be from Uganda was given to Dr. Ausorge by Capt. Williams.

Congo individuals are rather large; the blue submarginal spots of the upperside of the hindwing are often large, but not always larger than in individuals from other places; the base of the forewing above is sometimes as bright tawny orange as in Nyassaland specimens.

Dr. Trimen, *l.c.*, says that "in Damaraland, where Mr. J. A. Bell found it rather abundant, the butterfly was commonly found on the droppings of the larger animals. In Natal it would appear to be rare, Col. Bowker having sent me only an example, which was taken on an orange-tree at Pinetown, and another ♂ captured at the same place in April 1883."

b. **Ch. pelias pelias**.

Papilio Eques Achirus pelius Cramer, *l.c.*; Goeze, *Ent. Beytr.* III. 1 p. 82. n. 46 (1779); Herbst, *Naturs. Schmett.* IV. p. 62. n. 153. t. 63. f. 5. 6. (1790) (syn. ex parte; "Guinea" loc. err.).
Eriboea pelopia (!) Hübner, *Verz. bek. Schmett.* p. 47. n. 424 (1816-27).
Nymphalis pelias, Godart, *Enc. Méth.* IX. p. 351. n. 2 (1823) (Cap. b. sp.); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 20 (1850); Trimen, *Rhop. Afr. Austr.* I. p. 175. n. 101, II. p. 340 (1862) (pt.); Kirby, *Cat. Diurn. Lep.* p. 267. n. 4 (1871).
Charaxes pelius, Butler, *Proc. Zool. Soc. Lond.* p. 624. n. 4 (1865) (Cap. b. sp.); id., *Lep. Ex.* p. 25. n. 1. t. 10. f. 5. ♀ (1869) (Cap. b. sp.); Stand., *Exot. Taqf.* p. 168 (1886); Trim. & Bowk., *S. Afr. Butt.* I. p. 331. n. 109 (1887) (Cape Colony, western distr.) *id.*, *l.c.* III. p. 407 (1889) (Febr.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 335. n. 12 (1896); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 232. n. 5. (1899) (Cape Colony).

♂♀. *Wings above* basal area blackish brown.—Forewing: postdiscal pale ochraceous interspaces smaller than the black discal bars resp. spots at their proximal side; cell-bar 4 large and square.—Hindwing shorter than in *saturnus*, admarginal interspaces smaller, widely separated, thinner than the heavy, black, marginal line.

Underside reddish chocolate, bars pale grey with thin black and white borders, interspaces between them narrower than in *saturnus*, black outer borders of median bars of fore- and hindwing much heavier than the proximal borders.—Forewing: discal bars SC⁴—M² heavier than in *saturnus*, larger than the small ochraceous, postdiscal spots, black postdiscal spots (bars) SC⁴—M¹ obsolete or small.—Hindwing: reddish chocolate interspaces on abdominal fold very thin, except that near basal abdominal margin; basal to median costal bars fused, resp. touching each other; postdiscal reddish chocolate patches smaller than in *saturnus*, not so wide as the white discal band; admarginal interspaces with yellow spots which are widely separated, at least the upper ones; edge of wing bluntly dentate, tails shorter and broader than in *saturnus*, upper tail 2 to 3 mm. long, second 4 mm.

Length of forewing: ♂, 38 mm.

” ” ♀, 45 mm.

Hab. Cape Colony. In the Tring Museum 1 ♂.

“This is the only South-African *Charaxes* known to inhabit the open mountainous western tracts of the Cape Colony,” says Dr. Trimen, *l.c.* “Specimens have reached me from Genadendal (Rev. G. Hettarsch) and Montagu (Mr. L. Taats), and I noticed it in Bain’s Kloof in January 1876. Having heard from Dr. D. R. Kannemeyer that the species occurred abundantly at Montagu, I visited that locality in January 1876, but did not succeed in taking any examples, although I saw four during my two days’ stay. I found that, as my correspondent reported, the butterfly haunted the ‘Wagenboom’ (*Protea grandiflora*), sitting close until accidentally disturbed, when it darted away with great rapidity, and would settle on some distant bush of the ‘Wagenboom,’ not returning to its former station, as is the habit of so many species of *Charaxes*. Dr. Kannemeyer, however, who had a very much more intimate acquaintance with *pelias* than I enjoyed, noted that it commonly showed a preference for some particular twig, generally a withered one; it was most prevalent at the end of November and beginning of December. Mr. Taats took it, in the same locality, ‘flying about willows,’ February. I think it very probable that the larva feeds on the Wagenboom, and that the butterfly will be found all through the mountainous country where that fine shrub or small tree prevails.”

♂⁵. Discal band of upperside obscurely indicated or absent.

♂⁶. Hindwing with small blue postdiscal spots above.

61. *Charaxes jason*.

Papilio Eques Achivus jason Linné, *Syst. Nat.* ed. XII. p. 749. n. 26 (1767) (Barbaria); Drury, *Illustr. Ec. Ins.* I. p. 1. t. 1. f. 1. 2. and Index (1772) (Smyrna); Cramer, *Pap. Exot.* II. p. 136. t. 186. f. A. B (1777) (Smyrna); Stoll, in Cramer, *Pap. Exot.* IV. p. 78. t. 329. f. A. B. ♀ (1782) (Smyrna).

Papilio Eques Achivus jasius Linné, *l.c.* (Errata); *Onomat. Hist. Nat.* VI. p. 80 (1775); *Fabr., Syst. Ent.* p. 449. n. 29. (1775) (syn. ex parte; Barbaria); Goeze, *Ent. Beytr.* III. 1. p. 50. n. 26 (1779) (pt.); *Fabr., Spec. Ins.* II. p. 10. n. 40 (1781) (syn. ex parte; Barbaria); *Fabr., Mant. Ins.* II. p. 6. n. 44 (1787); Cyrillo, *Ent. Neapol. Spec. prim.* t. 2. f. 1 (1787); Herbst, *Naturs. Schmetz.* IV. p. 67. n. 155. t. 64. f. 3. 4. 5 (1790) (Africa); Gmel., *Syst. Nat.* I. 5. p. 2234. n. 26. (1790) (pt.); Giorna, *Calend. Ent.* p. 99. (1791) (metam.); Petagna, *Instît. Ent.* II. p. 443 n. 1. (1792) (Naples); Prunner, *Lep. Piedmont.* p. 2. n. 2. (1798); Esper, *Schmetz.* I. t. 99. cont. 54. f. 1. 2. ♂, ♀ t. 104. cont. 59. f. 2-7. metam. *Suppl. Tageschmetz.* p. 29. n. 187 and p. 61. (1805) (Nizza, end of Sept., habits, metamorph.).

Papilio (Achivus) jasius, Müller, *Naturs.* V. 1. p. 573. n. 26 (1776) (Barbaria).

- Papilio Nymphalis jasius*, Fabricius, *Ent. Syst.* III. 1. p. 61. n. 191 (1793) (syn. ex parte; Barbaria).
- Nymphalis jasius*, Latreille, *Hist. Nat. Crust. Ins.* XIV. p. 83. n. 1 (1805) (Nizza); Godart, *Enc. Méth.* IX. p. 350. n. 1 (1823) (Barbary; Spain; Portugal, Sicily, Naples, S. France, Nizza; Corsica; Hyères; Dalmatia; Constantinople; Asia Minor).
- Papilio Nymphalis rhea* Hübnér, *Samml. Eur. Schmett.* p. 19. n. 1. I. f. 111. 112. 580. 581 (1805-21).
- Eriboea unedonisi* Hübnér, *Verz. bek. Schmett.* p. 47. n. 423. (1816-27).
- Papilio jasius*, Ochsenheimer, *Schmett. Eur.* I. p. 151. n. 1 (1807); Godart, *Hist. Nat. Lep. Fr.* II. p. 81. n. 27. t. 10. f. 3. 4 (1822) (metam.).
- Charaxes jasius*, Ochsenheimer, *Schmett. Eur.* IV. p. 18 (1816); Boisd., *Spec. Gén.* I. t. 5. b. f. 12 (1836); Duponch., *Bull. Soc. Ent. Fr.* p. 59 (1837); id., *Ann. Soc. Ent. Fr.* p. 193 (1837) (larva); Thon, *Naturg. Schmett.* p. 72. t. 32. f. 507. 508 (1837); Herr-Schäff., *Schmett. Eur.* I. p. 45 (1843); Doubl., *List. Spec. Lep. Ins. Brit. Mus.* I. p. 110 (1844); Duponch., *Cat. Méth. Lep. Eur.* p. 11 (1844) (Spain; Provence; Italy; Turkey; June, Sept.); Pierr., *Bull. Soc. Ent. Fr.* p. 41 (1849) (Hyères); Bertol., *Mem. Ac. Sc. Bologna* II. p. 5. n. 1 (Sep.!) (1851) (ex parte); Girard, *Bull. Soc. Ent. Fr.* p. 6 (1864); Pierr., *Bull. Soc. Ent. Fr.* p. 52 (1864) (Hyères); Staud., *Cat. Lep. Eur. Faun.* p. 15. n. 192 (1871) (Maurit.; Iberia; Gall. mer.; Italia; Dalmat.; Graecia); Pears., *Ent. Mo. Mag.* X. p. 113 (1873) (Mentone; habits!); Saiger, *Ent. Nachr.* II. p. 156 (1876); Nolek., *Stett. Ent. Zeit.* XLIII. p. 174 (1882) (Cannes, larva); Ragusa, *Nat. Sic.* VII. p. 31 (1884); Calberla, *Iris* I. p. 130 (1885) (Civitavecchia, VI.; Firenze, X.); Honr., *Sitz.-Ber. Berl. Ent. Zeitschr.* p. 18 (1887) (Dalmat.; Lisboa); id., *l. c.* p. 21 (1891) (Dalmat.; Lisboa); Dönitz, *ibid.* (Portugal); Norris, *Entom.* XXIV. p. 179 (1891) (Corfu, habits); id., *Entom.* XXV. p. 95 (1892) (R. Magra, Italy, Oct.); Bromil., *ibid.* p. 323 (1892) (Nizza); id., *l. c.* XXVI. p. 219 (1893); Staud., *Entom.* XXVI. p. 262 (1893) (Ajaccio); Rühl, *Palaeart. Grossschm.* I. p. 320. 771 (1892-95); Chapm., *Ent. Rec.* p. 191 (1894).
- Apatura jasius*, Boisdual, *Ind. Meth.* p. 14 (1829) (Provence, May, Sept.).
- Paphia jasius*, Duponchel, *Icon. Chenill.* I. p. 167. n. 69. t. 24. f. 68. a. b. c. d (1832) (metam.).
- Nymphalis jason* Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 1 (1850) (S. Eur.; As. Min.; Barbary); Kirby, *Cat. Diurn. Lep.* p. 267. n. 1 (1871).
- Charaxes*, Rambur, *Lep. Andal.* p. 18 (1858) (Cadiz).
- Nymphalis iasius*, Müller, *Zool. Jahrb.* I. p. 505 (1886) (larva, pupa).
- Charaxes jason*, Butler, *Proc. Zool. Soc. Lond.* p. 623. n. 1 (1865) (S. Europe; Asia Min.; Barbary); id., *Cat. Diurn. Lep. descr. by Fabr.* p. 54. n. 16 (1869); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 355. n. 13 (1896) (Corsica; Spain; S. France).

♂ ♀. Similar to *Ch. epijasius*. Body and wings above more brown.

Wings, upperside.—Forewing: basal half of costal margin russet tawny like head and pronotum; black bars vestigial, in side-light the interspaces appearing paler than the bars; postdiscal interstitial spots orange, the series almost straight, slightly curving costad anteriorly, nearer outer edge in front than behind, upper spots largest, spot SC⁴—SC⁵ of about the same size as the respective admarginal spot, often somewhat smaller or larger, spots R³—SM² transverse, posterior ones often obsolete; admarginal interstitial band as in *epijasius*, deeper in colour, orange.—Hindwing: discal band represented by a white patch at costal margin, the patch much shaded with brown, often vestigial down to R², generally with one to three tawny patches or spots at outside; admarginal band of interspaces rather variable in width, the upper patches sometimes not longer than broad, while in other individuals they are as long as in *epijasius*, orange, posterior ones paler, distally shaded with greenish buff, anal one greenish buff; black marginal line heavier than in *epijasius*, its breadth measuring between R¹ and R² often more than half the length of patch R¹—R², but generally only one-third the length of this patch; a series of pale blue submarginal dots from R³—SM², spots SC²—R³ sometimes vestigial.

Underside as in *epijasius*, basal area brighter ferruginous red, postdiscal and admarginal interstitial patches of forewing deep orange, olive black median bars of

both wings thinner.—Forewing: orange patches in white discal band small or obsolete, hence the white colour more extended anteriorly than in *epijasius*; orange postdiscal spots longer anteriorly than towards internal margin, posterior ones transverse; submarginal olive grey scaling sharply defined distally; the admarginal orange patches smaller than above.—Hindwing: median series of bars concave from C—R³, often almost straight, median bar M¹—M² a little more distal than in *epijasius*; white discal band concave distally between C and R³, of about even width, generally widest before R³, about 2½ mm. broad at R¹; discal bar R²—R³ distinct as a rule, often well within white band, seldom absent; postdisco-submarginal area as in *epijasius*, width somewhat variable; admarginal chrome coloured band somewhat narrower than above, in some specimens half as wide again as in others, limited proximally by the submarginal bars, which are transverse, the upper ones being, however, sometimes uniform, while the last ones are curving basad at ends towards the postdiscal bars; upper tail 4 to 5 mm., second 8 to 9 mm.

♀. Paler than ♂, larger; median bar R³—M¹ of underside of hindwing often present, pale blue spots of upperside of hindwing sometimes enlarged to patches which nearly touch each other; tails longer; abdomen olive black beneath, segments edged with white, this scaling often extended at each side to a streak.

Length of forewing; ♂, 37—42 mm.

” ” ♀, 40—47 mm.

Clasper (Pl. VIII. f. 29) with the dorsal edge in dorsal view almost straight, suddenly curved before end, hook therefore strongly curved; penis (Pl. VIII. f. 11) thick, curved before end, with one strong dorsal tooth at the bent and often one or two smaller ones close behind; penis-funnel moderately narrowed towards end, apex rather flat, broad, apical edge turned down, triangular, pointed.

Hab. Mediterranean countries, where the food-plant, *Arbutus unedo*, is abundant, in two broods: the old writers received it from Asia Minor, but there is apparently no recent record of the species from there. The admarginal orange respectively chrome coloured band of the upperside is apparently wider in specimens from Greece than in individuals from the western parts of the Mediterranean subregion.

The egg, larva and pupa were discovered by Prunner, a German, who was an officer in the Sardinian army, and were figured and described by Esper (*l.c.*). Since then many accounts of the life history and the habits of *Ch. jasius* have been published. The egg, larva and pupa agree in structure with those of other *Charaxes* (see p. 282). The larva when quitting the egg is brownish green, but soon becomes brilliant green, sometimes somewhat bluish. There is a yellowish green, oval, dorsal patch on the third and fifth abdominal segments each, which are bordered by a dark line, and in the full-grown caterpillar become more or less blue centrally, or nearly all blue; central horns green or yellow basally, red apically, lateral horns red, externally yellow, with a stripe which extends to the mouth and is posteriorly bordered black. When the caterpillar has cast its skin the horns are first very short, but soon grow to normal size. The caterpillar lives on the upperside of the leaf, where it spins a kind of web which enables it to fasten itself on the leaf. Mr. Pearson gives, *l.c.*, the following description of the early stages of *Ch. jasius*:

“I was fortunate enough in the course of last winter and spring, spent at Mentone on the shores of the Mediterranean, to find the larva of this species in some

abundance, and trust that the following notes on its habits may prove of interest. The larvae were found on either slope of one of the numerous valleys which intersect the lower parts of the splendid amphitheatre of hills surrounding Mentone. These slopes are covered with a scrub consisting, for the most part, of myrtle, arbutus, and lentiscus. Having by chance discovered a small individual on an arbutus scrub, I was induced to search farther, when I found the larvae to be by no means uncommon. They were easily discovered, in spite of their colour approximating closely to that of their food plant, as they remained always on the upper surface of the leaf on the silken carpet to be after mentioned, which also greatly assists their detection. The arbutus shrubs were generally of small growth, although in some places they attained to 9 or 10 feet; the stunted plants I found, however, to be the most productive, especially when isolated. On only three occasions did I find more than one larva on a bush, viz., on two of these occasions two, and on the other no less than five. The larvae had hibernated, being all found during the month of January, and were about half grown, with the exception of three which did not exceed half an inch in length.

“A very good description of the caterpillar will be found in MM. Duponchel and Guenée’s ‘Iconographie des Chenilles’; the only remark I have to make on this head being, that in my specimens there was an evident difference in the shades of green exhibited by the larvae when seen together, some being darker, and of a bluish green, while others were more of a yellowish green. The difference in colour did not arise, as I at first thought it might, from the amount of shade enjoyed by the shrubs, as the darkest larva was found on a small plant of a foot and a half in height exposed to the full rays of the sun. The oval dorsal marks on the seventh and ninth segments were also much more strongly marked in some specimens than in others.

“The larvae of this species are very easily reared, being very sluggish and rarely moving from the leaf on which they may be resting at the time until it, or those within reach, are consumed. When they do move, it is only for a short distance, and they invariably retreat again to the original leaf on which their web is spun. This web consists of fine threads of silk closely plastered over the upper surface of the leaf, so as to give it a white, shiny appearance. It seems absolutely necessary to the larva to enable it to cling to the leaf, and one of its first proceedings on going to a new leaf is to spin this coating of silk over the surface. Thus one small larva, from some defect in its spinning apparatus, was unable to weave the usual carpet for itself, although it kept incessantly going through the usual motions for doing so, moving its head from side to side. It was constantly falling off the twig on which it was placed, and had to be replaced several times a day, till at length it fell off and was lost. They feed principally during the night, remaining inactive during the day, except when it is bright and fine, when, strange to say, they begin to eat as vigorously as on the approach of evening. They are not voracious feeders, however, and eat by fits and starts, never consuming much at a time. They have also a curious habit, when exposed to a strong sun, of extending and retracting the segments of their bodies, as if they appeared to enjoy the heat. When once they begin to eat a leaf, they seldom commence another till they have completely finished it, gnawing the midrib down to the very stem. Although found in dry localities, and in a region subject to little or no rain, they seem to be fond of moisture. I was in the habit of sprinkling their food with water, and I have often noticed them drinking up the drops. In a state of repose, the larva attaches itself to the leaf by its four pairs of

claspers only, the anal pair and feet proper being elevated, and the horns lying along the back. Several days before moulting, the new head appears in the form of a square dark green patch immediately behind the existing horns. This patch is bounded on each side by a rose-coloured border, ultimately proving to be the new horns; these last are at first very lax and drooping, but soon gain their normal position. There is a marked difference in the size of the head after the last moult, it being then nearly twice its former size; the horns, also, instead of being perfectly straight, are curved slightly downwards towards the back. When about to pupate, the larva becomes of a clear transparent green, and rather shrunk in size, and if placed in the sun becomes very restless, generally ending by falling off the food plant. It then spins a small ball of silk on the under side of a leaf, either on the midrib or on the edge, to which it attaches itself by the tail and hangs there with its head directed upwards towards the under part of the body for three days (sometimes a few hours more, sometimes a few hours less), when it changes to a smooth, stout, whitish-green chrysalis. It remains from twenty-five to twenty-seven days in pupa. The day previous to emergence, the wing-cases appear suffused with a rich purple, the double border of gamboge spots at the outer margin of the forewings being very distinct. If the day be warm, the perfect insect generally emerges during the early part of the next day; if, however, the weather be dull or cold, it often does not emerge till late in the afternoon, or in the evening."

The butterfly has the rapid flight of its congeners. It is sometimes observed sitting on the stems of trees, and is occasionally attracted by dry fruits, figs for instance.

♂. Hindwing above with a very large, triangular, blue patch.

62. *Charaxes epijasius*.

- Charaxes epijasius* Reiche, in Ferr. & Gal., *Voy. Abyss.*, *Ent.* p. 469. t. 32. f. 1. 2 (1849) (Abyssinia); Feisth., *Ann. Soc. Ent. Fr.* p. 257. n. 9 (1850) (Senegal; *ab.*); Butl., *Proc. Zool. Soc. Lond.* p. 623. n. 2 (1865) (Senegal); id., *Ann. Mag. N. H.* (4) XVIII. p. 481. (1876) (Atbara); Godm. & Salv., *Proc. Zool. Soc. Lond.* p. 223. n. 25 (1884) (Lower Niger); Staud., *Exot. Tagf.* p. 168 (1886) (Abyssinia); Honrath, *Sitz.-Ber. Berl. Ent. Zeitschr.* XXXI. p. 18 (1887) (Abyssinia); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 190. n. 48 (1893) (Adeli, all the year round); Schaus & Clem., *Sierra Leone Lep.* p. 8 (1893); Carpenter, *Proc. R. Dublin Soc.* (2). VIII. (1895) (Lokoja); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 355. n. 14 (1896) (White Nile; Atbara; Senegal; Lower Niger); Auriv., *Kongl. Sr. Vet. Ak. Handl.* XXXI. 5. p. 232. n. 3 (1899) (Senegal; S. Leone; Togo Hinterland; Niger; Lokoja; Njam Njam; Abyssinia).
- Nymphalis epijasius*, Doubleday, *List. Spec. Lep. Ins. Brit. Mus.* App. p. 28 (1848) (Senegal); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 2 (1850); Kirby, *Cat. Diurn. Lep.* p. 267. n. 2. (1871) (Abyssinia; Senegal).

♂ ♀. *Upperside* of body olive, head, second segment of palpi, pronotum and anterior part of mesonotum tawny russet, dots on head obsolete, line behind eye conspicuous; *underside* as in *kansali*, brown middle line of abdomen often broad.

♂. *Wings, upperside* brownish black, purplish, the median and discal bars vestigial in side-light.—Forewing: postdiscal interstitial tawny ochraceous spots partly vestigial, spot SC⁴—SC⁵ often rather clearly marked; marginal interspaces widened proximad, forming a broad marginal band, chrome yellow, paler behind, 6 to 7 mm. broad at SM², narrowing costad, incised upon internervular folds,

posterior veins thinly, upper ones heavily black, this black scaling dilated at extreme edge of wing.—Hindwing: a short, pale buff, triangular, discal band from costal margin to R^1 or R^2 , often reduced to a patch before SC^2 ; submarginal black bars well defined, bar $C-SC^2$ generally excepted, upper ones arched, posterior ones more straight, but curved distad at veins; the bars form the outer border of a large, pale blue, triangular patch, which is widest at M^2 , reaching to base of M^1 , expanded between C or SC^2 and SM^2 , narrowing costad, being only 2 to 3 mm. broad between SC^2 and R^1 ; admarginal interspaces maize yellow, forming a similar band as on forewing, very wide, upper patches widest, patch R^1-R^2 measuring 6 to 7 mm. between veins, anal one greenish olive, veins within band thinly black or bluish olive: black marginal line as in *Ch. pelias saturnus*, extremely thin at anal angle, fringe heavily white, black only at tips of veins.

Underside as in *Ch. pelias saturnus*, slightly varying in the depth of the red and ochraceous tints.—Forewing: median bars more distal, and discal ones, which are all present, more proximal than in *saturnus*, the white discal interspaces reduced to a thin band, which, moreover, includes a series of ferruginous red patches between SC^1 and M^2 , hence the white band here represented only by the distal white border of the median and the proximal border of the discal bars; postdiscal interstitial patches ochraceous rufous, touching each other or faintly separated, variable in size, mostly triangular, often transverse; black postdiscal patches as in *saturnus*, variable; bluish olive grey scaling at this spot less extended than in *Ch. pelias*, partly replaced by cream coloured scaling posteriorly; submarginal black bars not vestigial; admarginal interspaces smaller than above and paler; edge of wing black at ends of veins.—Hindwing: as in *saturnus*, white discal band narrower, sometimes with ferruginous red scaling at the outer side of the median bars $C-R^3$, besides the patch at costal margin, median bar R^3-M^1 sometimes vestigial; ferruginous red postdiscal patches and olivaceous submarginal interspaces narrower than in *Ch. pelias* owing to the extension of the admarginal interspaces; upper submarginal black bars generally rather shaded with olive grey; blue submarginal spots conspicuous; admarginal interspaces a little smaller than above, very pale buff yellow, whitish at veins distally; dentition of wing as in *saturnus*, upper tail 5 to 8 mm., second 9 to 11 mm. long.

♀. Like ♂, larger, upperside of wings a little more brown, white band of *underside* broader, and postdiscal interstitial patches of forewing less bright.

Length of forewing: ♂, 38—45 mm.

“ ” ♀, 45 mm.

Genital armature as in *Ch. jason*.

Hab. Abyssinia to Victoria Nyanza, Senegambia to the Niger, especially in the “Hinterlands.” In the Tring Museum 19 ♂♂, 1 ♀ from: Abyssinia, Bogos and Athara; Bulluji, Unyoro, 12. xii. '97 (Dr. Ansorge); Fajao, Unyoro, 16. viii. '97 (Dr. Ansorge). Bathurst, Senegambia; Kanakra Isl., S. Leone; Kumasi to Cape Coast, April 1899 (Capt. Giffard); Gambaga, October, November, 1898 (Capt. Giffard); Carnotville.

Feisthamel, *l.c.*, describes a sport in which the yellow colour of the band of the hindwing above has changed into a greenish colour, and in which the underside is greenish brown, with a broad middle band of a paler colour, the bars having disappeared.

D. Serrations of costal margin of forewing in basal half equal in number to the scale-rows in front of vein C.

e. Median and submedian bars of fore- and hindwing below well separated, not fused together to a narrow, brown or black, band; tail M² not spatulate.

g¹. Cell-bar 4 of forewing below separated into round spots, costal and subcostal bars of basal half of hindwing represented by round spots.

63. *Charaxes zingha*.

- Papilio Nymphalis phaleratus zingha* Stoll, in Cramer, *Pap. Ex.* IV. p. 53. t. 315. f. B. c ♂. (1780) (Afr.); Gmel., *Syst. Nat.* I. 5. p. 2312. n. 599 (1790) (S. Leone).
- Papilio Nymphalis Phaleratus berenice* Drury, *Illustr. Ex. Ins.* III. p. 13 and Index t. 11. f. 1. 2. ♂ (1782) (S. Leone); Fabr., *Mont. Ins.* II. p. 48. n. 471 (1787) (S. Leone); id., *Ent. Syst.* III. 1. p. 114. n. 350 (1793).
- Papilio zinghus*, Herbst, *Naturs. Schmett.* VI. p. 151. n. 86. t. 151. f. 3. 4 (1793).
- Tigridia zingha*, Hübner, *Verz. bek. Schmett.* p. 40. n. 355 (1816).
- Nymphalis berenice*, Godart, *Enc. Méth.* IX. p. 356. n. 21. (1823) (S. Leone); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 310. n. 39 (1850) (S. Leone).
- Papilio berenice*, Donovan, *Nat. Reposit.* III. t. 107 (1825) (S. Leone).
- Charaxes berenice*, Butler, *Proc. Zool. Soc. Lond.* p. 637. n. 60 (1865) (S. Leone); id., *Cat. Diurna. Lep. descr. by Fabr.* p. 54. n. 17 (1869) (S. Leone); Dewitz, *Nor. Act. Leop. Car. Ak. Naturf. L.* 4. p. 371 (1887) (Angola, I. II. IV. X.).
- Nymphalis* (?) *zingha*, Kirby, *Cat. Diurn. Lep.* p. 273. n. 57. (1871) (Afr. occ.).
- Momura zingha*, Mabille, *Bull. Soc. Zool. Fr.* I. p. 280 (1876); Auriv., *Ent. Tidskr.* XII. p. 216. n. 146 (1891) (Cameroons); id., *l.c.* XV. p. 312. n. 205 (1894) (Cameroons); id., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 245. n. 1 (1899) (S. Leone; Ashanti; Cameroons; Mukenge; Yambuya).
- Charaxes zingha*, Standinger, *Exot. Tagf.* p. 171. t. 58. ♂ (1886) (Gabun); Godm. & Salv., in Jameson, *Story of Rear Column* p. 441. n. 89 (1890) (Yambuya).

♂. *Body* above tawny (skeleton black); palpi, head and pronotum black, white dots on head and line behind eye and creamy white lateral dot of pronotum prominent, two tawny dots on pronotum near middle, also conspicuous, patagia pale in front, edged with black. *Underside* black and pale ochraceous; palpi, middle of pro- and mesosternum, two smaller anterior and a larger, elongate, oblique, posterior, lateral spots on mesosternum and abdomen, pale ochraceous; mesosternum with three dots at hinder edge, metasternum with a patch behind coxae and a rounded lateral patch, buff or whitish; abdomen with a black line at each side of middle line; anterior legs with tip of femur, base of tibia and the tarsus white, the other legs more or less scaled ochraceous, but femora black above, with some white scales.

Wings, upper side, black, with a large basi-discal orange red (Chinese orange) area which forms a large triangle pointing towards apex of forewing.—On forewing the area occupies base of cell, extends to SC⁵ or R¹, its costal edge from SC⁵—R³ has about the same direction as M, but is often somewhat concave, outer edge of area almost straight, oblique, incised upon and between veins, 5 mm. distant from outer margin of wing at R², 8 to 9 mm. at SM², the veins R¹—R³ traversing the area more or less black, patches SC⁵—R³ thus more or less separated, varying in width, patch SC⁵—R¹ small, sometimes absent; cell-bars partly vestigial; median and submedian bars R³—M² represented by black spots, median bar M¹—M² often vestigial only.—Hindwing: orange red area paler at costal margin, its

outer edge nearly straight, crossing M a little beyond M^1 ; a series of submarginal dots from R^2 — SM^2 , two in each cellule, the upper ones (often obsolete or absent) orange red, the posterior ones white, the series enrvd, nearly parallel to outer margin; admarginal SC^2 — M^1 present, orange red, spot R^1 — R^2 the largest, spots R^2 — M^1 often minute, spot M^1 — M^2 seldom vestigial, placed near tip of tail, creamy buff, spots M^2 —(SM^1) and (SM^1)— SM^2 yellow, mostly fused together, much smaller than spot R^1 — R^2 ; wing strongly rounded anteriorly, concave from R^3 — M^2 , produced into a blunt tail at M^2 , dentate at R^3 and M^1 , anal angle more produced than in *etesipe*.

Underside.—Forewing: internal area up to M^1 reddish orange, this colour entering cell; rest of wing very pale olive buff, with the veins and folds and the outer margin drab; basal cell-spot and cell-bar 2 fused together to a round spot, which has a similar spot in front before C, cell-bar 3 separated into two, cell-bar 4 into three round spots, the latter standing in a triangle, the most distal spot smallest; bar D very heavy, measuring $2\frac{1}{2}$ to 3 mm. in width in middle: submedian bar M^2 —(SM^1) sometimes indicated by a dot below base of M^2 , submedian and median bars R^3 — M^2 oblong spots, which do not always touch the veins, median bar R^3 — M^1 more distal than bar M^1 — M^2 , 6 mm. from base of M^1 , all these spots black, no median bar R^2 — R^3 , median bars SC^3 — R^2 fused together to a triangular, blackish drab, mark, pointing posticad, 8 mm. from upper angle of cell at SC^5 ; discal bars SC^3 — R^3 fused together to a drab line, which is ill-defined, stands midway between median triangular costal patch and apex of wing, is slightly curved, and is prolonged to M^2 by the black, partly obsolete, bars R^3 — M^2 , which are somewhat heavier upon veins; postdiscal bars M^1 — SM^2 represented by large black patches, bar R^3 — M^1 sometimes vestigial, internal margin black at angle of wing.—Hindwing: bars black; costal area from base to beyond middle, posteriorly limited by SC^2 or R^1 , creamy buff, here and there pinkish; two spots, one at base of C, the other at angle of PC, representing the basal costal bar; submedian and median costal bars also developed to large round spots, submedian and median bars C— SC^2 represented by smaller round spots, more distal, median bar R^1 — R^2 also a round spot; basal cell-bar joined at M to cell-bar 2 forming a ring which opens costad, cell-bar 4 joined near upper end to cell-bar 2, curved as in *etesipe*, posterior part very heavy, sending out a branch to bar D; median bars R^2 — M^2 all joined to, or fused with, bar D at base of R^3 , median bar M^1 — M^2 about $\frac{3}{4}$ to 4 mm. from base of M^2 , median bar M^2 — SM^3 fused to a heavy oblique band, 8 mm. from base of M^2 , crossing SM^3 several mm. proximally of its end; submedian and subbasal abdominal bars forming similar bands, extending to abdominal edge of wing, all these bars connected with one another by heavy longitudinal lines upon veins and internervular folds, the veins and internervular folds also more or less black between median and submarginal bars, but no internervular lines between median and discal bars C— R^1 ; discal bar C— SC^2 6 mm. from tip of C, bar R^1 — R^2 7 mm. from tip of R^2 , somewhat luniform, triangularly dilated basad, bars C— R^2 fused together as are bars M^1 — SM^3 , but discal bars R^2 — M^1 more isolated, represented by long triangular dashes; postdiscal series of bars similar to discal series, but dilated distad upon internervular folds, bars R^2 — M^1 luniform, bars M^1 — SM^2 very heavy, fused with the submarginal bars, postdiscal interspaces C— M^1 more or less rufous red, the upper one the smallest, spots R^1 — M^2 halfmoon-shaped, interspaces M^1 — SM^2 filled up by two yellow spots, the second twice as large as the first, both narrower than interspaces R^1 — M^1 ;

submarginal bar C—SC² somewhat curved, bars SC²—R² straight, bars R²—M¹ much more distal, the series being broken at R² as in *etesipe*, slightly curved distad, bars M¹—M² fused with the postdiscal bar and the marginal line to a large patch with which is also fused the large patch formed by the postdiscal and submedian bars M²—SM²; submarginal interspaces within this black patch represented by small bluish white dots, submarginal interspaces C—R² drab, divided at folds, followed by two more whitish ones, also divided; marginal line black, not interrupted; admarginal interspaces C—R² rather large, rufous red, interspace R²—R³ narrower, constricted or interrupted, the next still narrower, often obsolete, represented generally by a rufous red and an olive buff dot, no admarginal interspace M¹—M², while interspace M²—SM² is represented by a large pale yellow spot; subbasal to discal interspaces in posterior half of wing pale buff, becoming almost white towards base.

♀. Body above ochraceous, thorax slightly olivaceous, head and palpi and pronotum black, spots as in ♂, anterior tarsus pale ochraceous.

Wings above with a large orange area, which becomes slightly reddish in cell of forewing, this area larger than in ♂.——Forewing: apex blunt, outer margin faintly concave in middle, internal angle rounded; cell all reddish orange, with the dots of the underside all marked, but partly only vestigial; broad bar D also mostly isolated, the orange colour penetrating outside bar D to SC⁴⁻⁵; heavy median bars SC³—R² at least vestigial, median bar R²—R³ represented by a black dot, which is absent from underside, median bar R³—M¹ a conspicuous dot, a little more distal than in ♂; submedian and median dots M¹—M² vestigial; the black outer area about 10 mm. at SM², narrowing costad, of nearly equal width from SC⁵ or R¹ to R³; cellules R¹ to costal margin black, except postdiscal spot SC⁵—R¹ (which has sometimes a distinct spot in front); the discal bars are sometimes clearly marked, angle-shaped or uniform, black or rufous red, separating a series of spots from the orange area, of which spots M¹—SM² are generally small; veins black near outer area.——Hindwing: outline nearly as in ♂, anteriorly less rounded, the wing produced into a lappet from M¹ to (SM¹), this lappet divided by an incision at fold M¹—M² into a smaller and slightly longer, rounded, anterior, and a broader, obliquely rounded, posterior portion; orange or pale orange area wider than in ♂, extending 3 to 5 mm. beyond apex of cell, its outer edge irregular; bar D and median bar R²—R³ often marked, also sometimes median bars SC²—R², while the other bars in the basal half generally shine through from the underside; outer half of wing not so deep black as in ♂, with three series of markings: a series of small postdiscal spots, reddish orange, the posterior ones paler, the upper ones often obsolete, a series of submarginal dots, the series broken at R² and again at M¹, the upper portion often obsolete, orange, the second portion of 4 dots rather heavy, orange, the last of the 4 whitish, and the third portion (still more distal) white; an admarginal series consisting of spots C—R³ which are complete, spot R¹—R² large, orange, and of spots R³—SM² which are yellow, spot R³—M¹ interrupted, spot M²—SM¹ also interrupted, the upper portion generally absent, or at least minute, the second portion a rounded or ovate patch, spots M²—SM² often fused to a narrow line.

Underside appearing somewhat paler than in ♂, the bars being on the whole not so heavy, and consequently the pale interspaces larger.

Length of forewing: ♂, 34—38 mm.

„ „ ♀, 41—45 mm.

Length of SC² of hindwing (from base) : ♂, 23 mm ; ♀, 30 mm.

„ M + M² „ „ ♂, 27 mm ; ♀, 33 mm.

Clasper more complicated than in the allied species, the dorsal margin produced mesiad into a tooth which is deeply grooved on the upperside, apex of clasper beyond this tooth broad, then narrowed into a hook ; ventral edge of clasper armed on the inner side with a tooth which points distad (Pl. VIII. f. 30, subdorsal view) ; penis-funnel long, very slender, apical third convex above, almost rod-like, end curved downwards, forming a hook ; penis thick, apex compressed, a short denticulated dorsal ridge before the end ; tenth abdominal tergite with two processes.

Hab. West Africa, from Sierra Leone to the Upper Congo. In the Tring Museum 22 ♂♂, 11 ♀♀, from : S. Leone, Pt. Lokkoh, Suza country, vii. '99 (Capt. Stevens) ; Sherboro ; Accra ; Warri, Niger, 4. v. '76 (Dr. Roth) ; Stanley Pool to Lnkolele, and Bopoto, Congo ; Great Forest on Upper Congo, three days' march from Ft. Beni, 7. v. '99 (Dr. Ausorge).

This species has been separated generically from *Charaxes* on account of the outline of the hindwing. The absence of tail R³ and the shortness of tail M² give the insect a peculiar appearance, but do no more justify a generic separation from *Charaxes*, than the difference in the outline of the wings does in the case of *varanes*, *mycerina*, etc. In our opinion *Ch. zingha* is closer related to *Ch. etesipe* than this is to *Ch. jasius*, *candiope*, *polyxena*, etc. It is in colour of an acraeoid appearance.

*h*¹. Cell-bar 4 of forewing below not separated into rounded spots.

*i*². Bars of underside chestnut tawny with black or brown borders, heavy.

*m*³. Discal and postdiscal bars of hindwing below not regularly arched.

*m*⁴. Band of upperside of hindwing distal of middle of wing in ♂.

64. *Charaxes etesipe*.

♀. *Papilio Nymphalis Phaleratus etheocles*, Drury (non Cramer, 1777), *Illustr. Es. Ins.* III. p. 12. t. 10. f. 1. 2. and Index (1782) (S. Leone) ; Fabr., *Ent. Syst.* III. 1. p. 64. n. 200 (1793) (pt.).

♀. *Nymphalis etesipe* Godart, *Enc. Méth.* IX. p. 355. n. 19 (1823) (S. Leone).

♂. *Nymphalis etheta* Godart, *l.c.* p. 356. n. 20 (1823) (Afr. occ. ; ♂ of *etesipe* ?).

♂. *Body above* olivaceous black, head, pronotum and anterior portion of mesonotum bistre ; dots on head and pronotum and line behind eye prominent, mesial dot of pronotum mostly concealed by the hair-like scaling ; *underside* cream colour, palpi white, stripes on sterna underneath legs, posterior part of metasternum and upperside of anterior tibia and tarsus brown or black, four posterior femora black on upperside, with dispersed white scales.

Wings above, blackish blue, glossy blue in side-light, more glossy towards base, with a greenish tint.—Forewing : outer margin generally obviously denticulate ; a spot in upper angle of cell and a series of five discal spots SC⁵—M¹ white, mostly edged with blue, spot R²—R³ minute or absent, close to cell, spot R¹—R² also small, the other three about 1 to 1½ mm. in diameter, no discal spots from M² to internal margin ; a complete postdiscal series of spots, the posterior ones the largest, often developed to large patches, pale blue, the upper four or five small, more or less white, generally blue at edges, spot R¹—R² the smallest, the series parallel to outer margin, curving costad in front ; a complete series of admarginal spots, pale blue, whitish upon internervular folds.—Hindwing : a postdiscal series of pale blue spots, the series somewhat angled before R³, in some forms the spots dilated basad to the apex of the cell and fused together, the upper ones

mostly excepted, representing a broad disco-postdiscal band, bar D and median bars C—R² sometimes vestigial, a white discal patch C—SC² either isolated or joined to the respective blue postdiscal spot; submarginal dots white, mostly blue at edges, spot R¹—R² small, sometimes vestigial; admarginal spots R²—M² generally continuous, feebly interrupted by the black veins, extending far into tails, pale blue, mostly white at veins, spots SC²—R² rufous red, heavy, or vestigial, or absent; anal spot buffish: the submarginal and admarginal series broken at R² owing to the wing being suddenly dilated at R²; a white and pale blue patch at abdominal margin near anal angle.

Underside variegated with cream colour and drab; basal to median bars rufous red, edged with black.—Forewing: markings in cell and submedian and median bars heavy; basal cell-spot present, with a costal spot in front; bar 3 more or less rounded, bar 4 strongly angled, interspaces more or less creamy white; submedian bar M¹—M² before base of M¹, more distal than bar M²—(SM¹), the latter extended black, often joined to respective discal one, no submedian bar R³—M¹; discal bars M¹—(SM¹) continuous or nearly so, bar R²—R³ more proximal, bar R¹—R² more distal than bars SC³—R¹, these latter fused to one marking, median bars with milky white patches at outer side; discal bars black, standing in a slightly enrvd series, bar M²—(SM¹) sometimes touching median bar, bars SC¹—M¹ short, more like spots than bars, not luniform, all at outside with milky, or creamy, white patches—posterior ones externally shaded with rufous in some individuals—which are well separated from one another and reach to the postdiscal black bars, which stand in a series about parallel to outer margin, the posterior bars patch-like, the middle ones represented by rather small spots, the upper two larger again, especially patch SC⁴—SC⁵, which has often a rufous red centre; submarginal bars thin, forming a blackish drab line which is more or less interrupted at veins, very widely so at R³, edge of wing thinly blackish drab, admarginal interspaces with white or creamy patches between veins, patches SC³—SC⁴ and R¹—R² small.—Hindwing: basal costal bar represented by a brown spot, PC edged with blackish brown, costal submedian, median and discal bars wanting, the costal area up to postdiscal bar creamy white; subbasal to discal bars C—SC², cell-bar 2 and upper portion of cell-bar 4, as well as median and discal bars SC²—R¹, heavy; subbasal to median bars C—SC² close together; bar D thin; basal cell-spot black, veins SM², SM³, and (SM¹) more or less black, a line between these veins and sometimes one beyond SM³ also black; median bars M²—SM² zigzag; discal and postdiscal bars black, parallel, bars R²—R³ more distal than bars R¹—R² and R³—M¹, postdiscal bars R³—SM² arched, the respective discal ones not or only slightly arched; submedian white spots prominent, submedian interspaces drab, this colour extending between C and R² to discal bars or more basal; blackish brown submarginal bars C—R² straight, bars R²—M¹ enlarged, black, bars M¹—SM² much shaded with blue; admarginal spots C—R² rufous red, bordered all round with white, transverse, upper one triangular, spot R²—R³ olive buff, small, often very thin, spots R³—M² larger, more or less yellow, not interrupted at M¹, anal spot olive buff; tails slender, long.

♀. *Body above*, less black than in ♂, bistre brown; *underside* as in ♂, but abdomen brown, with buffish or whitish edges to the segments; anterior tarsi white.

Wings, upperside: purple black, with a slight bluish gloss, which is stronger and more greenish in basal area.—Forewing: the markings creamy white, or from M² to costal margin pale tawny ochraceous; discal spots as in ♂, but smaller,

spots R^3-M^2 either separate or fused with the postdiscal patches, in which case bars R^3-M^2 are vestigial; postdiscal spots always large, except upper three, about 6 to 8 mm. wide at SM^2 , the series oblique; no distinct admarginal spots.—Hindwing: a mediano-discal band from costal to abdominal margin, white, straight, at right angles to R^1 , narrowest between SC^2 and R^1 , much shaded with olive buff or blue (except in front), bordered with that colour at both sides; submarginal white spots as in ♂, sometimes obsolete, except the last ones; admarginal spots less conspicuous than in ♂, often more or less obsolete.

Underside: similar to that of ♂, disco-postdiscal creamy or milky white patch of forewing large, no discal bar $M^2-(SM^1)$; tails less pointed, sometimes slightly spatulate.

Length of forewing: ♂, 34—41 mm.

” ” ♀, 39—45 mm.

Tenth tergite of abdomen (♂) rounded; clasper essentially as in *Ch. achaemenes*; penis-funnel shorter than in that species, otherwise similar in shape; penis with a triangular ridge about 3 mm. before end, similar to that of *Ch. etheocles*, but dorso-lateral; the size and outline of the ridge is variable; there are often some small teeth before the ridge.

Hab. Tropical West and East Africa, and Madagascar.

The geographical representative forms which we unite here under one species are constantly and conspicuously different in the width of the postdiscal band across the upperside and in some other details; the East African *taretensis* stands exactly intermediate between the West African *etesipe* and the Malagassic *cacuthis*, while *abyssinicus* connects *taretensis* with *etesipe*.

a. *Ch. etesipe cacuthis*.

Charaxes cacuthis Hewitson, *Exot. Butt.* III. *Charaxes*. t. 3. f. 12. ♀. 13. ♂ (1863) (Madagascar); Butl., *Proc. Zool. Soc. Lond.* p. 629. n. 26 (1865) (Madag.); Saalm., *Lep. Madag.* p. 88. n. 127 (1884); Mab., in Grandid., *Hist. Nat. Madagasc., Léop.* I. p. 185. n. 4. t. 22. f. 1. 2. 3 (1885-87) (E. and N.E. Madag.; Nossibé); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 399. n. 145 (1896) (Madag.); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 15 (1899) (Madag.); *Nymphalis cacuthis*, Kirby, *Cut. Diurn. Lep.* p. 269. n. 25 (1871) (Madag.); ♀. *Charaxes antanala* Lucas, *Ann. Sc. Nat.* (5). XV. no. 22. p. 1 (1872) (Madag.).

♂. *Wings above*, band broad.—Forewing: rather more elongate than in *etesipe etesipe*, outer edge denticulate, postdiscal band 7 to 10 mm. wide behind SM^2 , $5\frac{1}{2}$ mm. behind M^2 ; white discal spot M^1-M^2 touching or almost touching postdiscal patch; admarginal spots small, last two seldom fused.—Hindwing: white costal patch $C-SC^2$ contiguous with blue postdiscal one, blue patch SC^2-R^1 about 6 mm. long, band not interrupted from R^1 to (SM^1) , broader from R^1 to M^2 than black outer area, outwardly concave between veins R^3-SM^2 , crossing M between bases of M^1 and M^2 , generally two white spots SC^2-R^2 marked within band close to its proximal edge; admarginal, rufous red, spots SC^2-R^2 present as a rule, but often obsolete.

Underside: white colour somewhat more extended than in the other two races.—Forewing: submarginal bars R^2-M^1 present, discal bars M^2-SM^2 close to median bars.

♀. *Wings above*.—Forewing: markings from M^2 to costal margin pale tawny ochraceous or whitish ochreous buff; discal spots R^3-M^2 fused with the postdiscal ones, respective median bars vestigial within the patches thus formed, postdiscal and discal spots R^2-R^3 joined together by means of chestnut scaling which extends

sometimes to apex of cell, spots R^1 — R^2 sometimes joined together in the same way. —Hindwing: band bordered with blue, the blue scaling extending basad beyond base of M^2 ; submarginal dots C — R^2 obsolete as a rule; admarginal spots SC^2 — R^2 vestigial.

Underside.—Forewing: outer half of cellules R^2 — M^1 for the greater part drab, the submarginal bars present.—Hindwing: postdiscal bars and white submarginal spots somewhat wider apart than in the continental forms.

Length of forewing: ♂, 34—38 mm.

” ” ♀, 39—42 mm.

Hab. Madagascar. In the Tring Museum 11 ♂♂, 2 ♀♀: Antonambé, baie d'Antongil, iii. iv. '98 (A. Mocquerys); Antanosy country.

b. Ch. etesipe tavetensis (Nov. Zool. V. t. 5. f. 4. ♂).

Charaxes tavetensis Rothschild, *Nor. Zool.* I. p. 535. n. (1894) (Taveta); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 399. n. 146 (1896); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 14 (1899).

Charaxes cacuthis, Lanz (non Hewitson, 1863), *Iris* IX. p. 142 (1896) (Parumbira, X.).

♂. *Wings above*: as in *cacuthis*, but posterior postdiscal patches of forewing narrower, patch M^2 — SM^2 measuring 4 mm. at the widest point, discal spots R^3 — M^2 widely separated from postdiscal ones as in *etesipe*.—Hindwing: postdiscal blue patches C — R^2 much smaller than in *cacuthis*, separated from one another, the upper ones not entirely contiguous with white discal patch, no white discal spots SC^2 — R^2 , black outer area wider from R^2 to SM^2 than in both *etesipe* and *cacuthis*; white submarginal dots all present, but dot R^1 — R^2 minute as a rule; admarginal spots SC^2 — R^2 obsolete.

Underside: as in *etesipe*, the creamy white discal spots of the hindwing larger on the whole.

♀. *Wings above*.—Forewing: markings creamy white; discal spots R^3 — M^2 fused with the postdiscal ones to ovate patches, bars within these patches vestigial.—Hindwing: band bordered and shaded over with olive buff; rufous red admarginal spots SC^2 — R^2 at least vestigial, bluish grey admarginal spots R^2 — M^2 present.

Underside: somewhat more extended drab than in *cacuthis*.—Forewing: cellules R^2 — M^1 white for the greater part from discal bars to outer margin, discal bars R^3 — M^2 obsolescent.

Length of forewing: ♂, 35—41 mm.

” ” ♀, 42 mm.

Hab. East Africa. In the Tring Museum 3 ♂♂ from: Taveta, July 1891 (*type*); Dar-es-Salaam; Zomba, Nyassaland, xii. 1895 (Dr. Perey Rendall). 2 ♀♀ in the Berlin Museum from Dar-es-Salaam.

The Zomba example has the blue postdiscal patches of the forewing above more proximal than the other specimens, the patches being the same in position as in *cacuthis*, and the band of the hindwing is also more proximal.

c. Ch. etesipe abyssinicus Rothsch. subsp. nov.

Charaxes etesipe, Oberthür (non Godart, 1823), *Ann. Mus. Civ. Genova* XV. p. 165. n. 44. (1879) (Let Marefia, Shoa, Aug. '77); id., *l.c.* XVIII. p. 727. n. 55 (1883) (Feleklek, XII., Sciotalit, I. IV.); Auriv., *l.c.* (pt.).

♂. Differs from *Ch. etesipe tavetensis* as follows: *Upperside*, forewing, postdiscal patch M^2 — SM^2 larger, patch at internal margin extended to angle of wing;

admarginal spots larger, spots M^2 — SM^2 merged together to one spot, which is somewhat 3-shaped and touches the veins.—Hindwing: pale blue band of more even width, being narrower behind, and broader in front than in *tacetensis*, patch SC^2 — R^1 measuring nearly 5 mm. in length, while patch R^3 — M^1 is very little over 5 mm. long.

Underside: ground colour more cinnamon, the white patches as well as the red bars near the end of the cell of the hindwing much less distinct.

♀. Unknown.

In the form of the band of the hindwing intermediate between *Ch. etesipe* *tacetensis* and *Ch. etesipe etesipe*.

Length of forewing: ♂, 40 mm.

Hab. Abyssinia: Sciotalit, Scioa (Shoa), 23. i. '80 (Antinori), 1 ♂.

d. *Ch. etesipe etesipe*.

Papilio Nymphalis Plateratus ethocles, Drury (non Cramer, 1777), *l.c.*; Fabr., *l.c.*

(?). *Papilio Eques Achivus ethocles*, Herbst, *Naturs. Schmetz.* IV. p. 71. n. 157. t. 65. f. 5 (1790) (pt.).

♀. *Nymphalis etesipe* Godart, *l.c.*; Doubl., Westw. & Hew., *Gen. Diurn.* II. p. 308. n. 9 (1850).

♂. *Nymphalis etheta* Godart, *l.c.*: Guér., *Icon. Règne An.* t. 78. f. 4 (1829) & p. 477 (1844); Griffith, *Anim. Kingdom, Ins.* t. 2. f. 4 (1832); Doubl., Westw. & Hew., *l.c.* n. 10 (1850).

♀. *Charaxes etesipe*, Butler, *Proc. Zool. Soc. Lond.* p. 629. n. 25 (1865) (S. Leone).

♂. *Charaxes etheta*, Butler, *l.c.* n. 27.

♀. *Charaxes ethocles*, Butler, *Cat. Diurn. Lep. descr. by Fabr.* p. 52. n. 9 (1869) (pt.).

♂ ♀. *Charaxes etesipe*, Butler, *Tr. Ent. Soc. Lond.* p. 273. t. 5. f. 6, ♂ (1869) (*etheta* = ♂ of *etesipe*); Mab., in Grandid., *Hist. Madag., Léop.* I. p. 189. n. 8 (1885-87) (Madagascar *ex err.!*); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf. L.* 4. p. 371 (1887) (Mukenge, IV. VIII.); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 146. n. 80 (1890) (Gaboon); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 87 (1890) (Aruwimi); Godm. & Salv., in Jameson, *Story of Rear Column* p. 440. n. 81 (1890) (Aruwimi); Upper Congo); Auriv., *Ent. Tidskr.* XII. p. 215. n. 140 (1891) (Camerons; Gaboon); id., *l.c.* XV. p. 311. n. 196 (1894) (Camerons, IV. XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 399. n. 147 (1896) (S. Leone: Accra; O. Calabar; Isubu; Camerons); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 13 (1899) (S. Leone to Angola and Aruwimi); Abyssinia and Madagascar *loc. err.*).

♂ ♀. *Nymphalis etesipe*, Kirby, *Cat. Diurn. Lep.* p. 269. n. 24 (1871) (Afr. occ.); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 29 (1879) (N. Angola).

♂. *Wings* shorter and broader than in the other races; *above* with postdiscal macular bands narrow.—Forewing: discal spot M^1 — M^2 nearer to cell than to postdiscal spot; postdiscal spot M^2 — SM^2 proximally incised, distally produced into a short line upon (SM^1), somewhat shaped like figure 3, about half as wide again transversely as in basi-distal direction, spot M^1 — M^2 convex proximally, somewhat concave distally, diameter about $1\frac{1}{2}$ mm., spot at internal margin very variable in length; posterior admarginal spots rather heavier than in the other races.—Hindwing: postdiscal spots nearly equal in width, spot C — SC^2 often small, sometimes obsolete, spots R^3 — SM^2 distinctly halfmoon-shaped, all separated from one another, the last ones, however, mostly touching each other.

Underside more extended drab than in *cacuthis*.—Forewing: discal bars M^1 — SM^2 widely separated from median ones; cellule M^2 — SM^2 much shaded with black, with scarcely any or with few white scales at outer side of median bar, the discal bar M^2 — SM^2 very heavy, as in *tacetensis*; cellules R^2 — M^1 with a large creamy patch, the submarginal bars more or less obliterated.—Hindwing: discal bars R^3 — M^2 very short.

♀. *Wings, above*: markings varying individually from white to creamy buff.—Forewing: spots smaller than in *tacetensis*, discal spots R^3 — M^2 as a rule

separate from postdiscal ones, seldom close to them, or, if fused with them, very small.—Hindwing: admarginal line R^2-M^2 obsolete or very thin and interrupted; white submarginal dots $C-R^2$ more or less obsolete in the specimens from Sierra Leone to Gold Coast.

Length of forewing: ♂, 35—40 mm.

” ” ♀, 41—45 mm.

Hab. West Africa, from Sierra Leone to Angola and Unyoro. In the Tring Museum 36 ♂♂, 11 ♀♀ from: Sierra Leone; Kumassi to Mansu, iv. '99 (Northcott); Mamfi, Accra, Begoro; Warri, 20. ix. '97 (Dr. Roth); Cameroons; Great Forest of Upper Congo, two and three days' march from Ft. Beni, 6. v. & 7. v. '99 (Dr. Anson); Congo; Kassai; Wakibara, Unyoro, 23. vii. '97, Warringo R., Unyoro, 8. vii. '97, Fajao, Unyoro, 10. xii. '97 (Dr. Anson).

Dr. Roth caught a ♀ at night at a lamp (!) at Warri, Niger Coast Protectorate. Pl. V. of Nov. Zool. V. represents a curious aberration from Sierra Leone.

n^4 . ♂ with band of hindwing above in middle.

65. *Charaxes penricei* Rothsch., sp. nov.

♂. Body as in *Ch. etesipe*.

Wings, upperside, bluish black, somewhat metallic green towards base.—

Forewing: markings similar in position to those of *Ch. etesipe cacuthis*, all white, the posterior patches slightly edged with blue, postdiscal spots SC^1-R^3 larger than in *cacuthis*, patch M^2-SM^2 6 mm. wide, more proximal than in *cacuthis*, being 9 mm. distant from end of SM^2 .—Hindwing: a band across the wing as in the ♀ *etesipe*, but the band is blue for the greater part, the white colour being restricted to spots which correspond to the white spots of the underside, externally the band is incised upon the veins, point of origin of M^1 about in middle of band; median bar $C-SC^2$ and bar D appear as black lines within the band; submarginal and admarginal spots essentially as in *etesipe etesipe*.

Underside nearly as in *etesipe* ♂, but the white markings larger and purer in colour, the red bars brighter.—Forewing: black discal bars R^3-SM^2 placed as in *etesipe* ♀, being much more proximal than in *etesipe* ♂, discal bar M^2-SM^2 not clearly separated from the respective median one, white postdiscal interspace M^2-SM^2 $3\frac{1}{2}$ mm. broad at M^2 , and 5 mm. at SM^2 , black postdiscal patch M^2-SM^2 larger than in *etesipe* ♀.—Hindwing: rufous red postdiscal spots $C-R^2$ very conspicuous, the following postdiscal interspaces also more or less rufous red, median and submedian bars $M^2-(SM^1)$ closer together than in *etesipe*.

Length of forewing: ♂, 38 mm.

Genital armature not essentially different from that of *Ch. etesipe*.

Hab. Quebe R., Angola (Penrice), 1 ♂.

This curious species resembles much more the ♀ of *Ch. etesipe* than the ♂ on the upperside of the hindwing, while on the forewing the pattern recalls that of *Ch. etesipe cacuthis* from Madagascar.

n^3 . Discal and postdiscal bars of hindwing below regularly arched, forming halfmoons together.

66. *Charaxes achaemenes* (Nov. Zool. VII. t. 12 f. 1. ♀).

Charaxes jocaste Doubleday, *List. Spec. Lep. Ins. Brit. Mus.* I. Append. p. 28 (1844) (*nom. nud.*); Butl., *Proc. Zool. Soc. Lond.* p. 628. n. 21 (1865) (*nom. nud.*; Senegal); id., *Tr. Ent. Soc. Lond.*

p. 274 (1869) (*achaemenes* = *jocaste*); id., *Ann. Mag. N. H.* (4). XVIII. p. 481 (1876) (Atbara); id., *l.c.* (6). VII. p. 42. n. 11 (1891) (Kandera, X.); id., *Proc. Zool. Soc. Lond.* p. 648. n. 17 (1893) (Zomba, VII.).

Nymphalis jocaste Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 17 (1850) (*non. nud*; Senegal).

Charaxes achaemenes Felder, *Reise Novara, Lep.* p. 446. n. 729. t. 59. f. 6. 7 (1867) (Natal); Butl., *Tr. Ent. Soc. Lond.* p. 121. n. 20 (1870) (= ♂ of *jocaste*); Obertb., *Ann. Mus. Civ. Genova* XVIII. p. 727. n. 56 (1883) (Shoa, August); Trim. & Bowk., *S. Afr. Butt.* I. p. 340. n. 113 (1887) (Natal); Del. Bay; Bechuanaland); Mab., *Ann. Soc. Ent. Fr.* p. 23 (1890) (Assinie); Trim., *Proc. Zool. Soc. Lond.* p. 80. n. 35 (1891) (S.W. Afr.; Omrora, VIII.; Ehanda, IX.); Monteiro, *Delagoa Bay* t. 1. f. 2 (1891); Trim., *l.c.* p. 41. n. 65. t. 5. f. 7. ♀ (1894) (Manica); Carpent., *Proc. Roy. Dublin Soc.* (2). VIII. (1895) (Lokoja); Butl., *Proc. Zool. Soc. Lond.* p. 256. n. 18 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 356. n. 15 (1896) (Senegal; Athara; Kandera; Zomba; Zambesi; Del. Bay); id., *Proc. Zool. Soc. Lond.* p. 822. n. 11. (1896) (Deep Bay, Nyassa, III.); id., *l.c.* p. 852. n. 11 (1896) (Nyassa); Lanz, *Iris* IX. p. 142. (1896) (Tanganyika); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 234. n. 16 (1899) (Senegal; Ivory Coast; Lokoja; Angola; S.W. Africa; Bechuanaland; Natal to the Tanganyika, Somaliland and Abyssinia).

Nymphalis achaemenes, Kirby, *Cat. Diurn. Lep.* p. 269. n. 20 (1871); Dewitz, *Nor. Act. Leop. Car. Ak. Natof.* XLI. 2. 2. p. 28 (1879) (Angola).

♂. *Body above* olive drab, head and pronotum nearly walnut brown, abdomen drab colour; white dots on head and line behind eye conspicuous; *underside* creamy white, with brown oblique streaks on breast underneath femora, anterior tibia brown in front.

Wings above olive black, bistre colour towards base; markings white.—*Forewing*: elongate as in *Ch. fabius fabius*; cell mostly with an obscure spot in upper angle; a discal band of four patches from R³ to internal margin, oblique, patch M²—SM² 5 mm. broad at SM², patches R³—M² mostly somewhat narrower, separated, convex proximally, somewhat concave distally, especially patch R³—M¹, this band preceded by three discal spots; spot R²—R³ close to cell, small, the other two, SC⁵—R², at about $\frac{1}{3}$ the way from cell to apex of wing; an oblique postdiscal series of spots from SC⁴ to M², decreasing in size posticad, the upper one $1\frac{1}{2}$ to $2\frac{1}{2}$ mm. wide, spots R³—M² close to discal patches, with which they are sometimes completely fused; a series of admarginal elongate dots from SC⁴—SM², standing upon the internervular folds, the spots of about the same size throughout.—*Hindwing*: a discal band from costal margin to abdominal fold as prolongation of the band of the forewing, $4\frac{1}{2}$ mm. broad at SC², generally widened basad in cell, its outer edge nearly straight, crossing M at, or a little beyond, origin of M¹; a complete series of submarginal dots, all prominent, more or less heavily shaded with glaucous blue; admarginal spots linear, glaucous blue, somewhat white at veins as a rule, extending into tails, spots R¹—R³ thin, SC²—R¹ absent or vestigial, C—SC² absent, anal one more or less yellow, wing suddenly widened from R² to SM², hence the admarginal and submarginal series of spots broken at R² (which is especially evident on underside); abdominal fold grey in middle, especially near SM³, with an ill-defined white patch before anal angle.

Underside: greyish white, variegated with drab colour; basal to median bars rufous chestnut, edged with black, except thin bars SC²—SM³ of hindwing, which have the black edges seldom vestigial.—*Forewing*: basal cell-spot present, cell-bar 3 represented by a spot behind SC, bar 4 very oblique, curved costad, somewhat comma-shaped, but of nearly the same thickness throughout, closer to M² than M¹; bar D somewhat dilated costally; submedian and median bars about at right angles to veins, interspaces M¹—(SM¹) of about the same width, bars M¹—M² more distal

than bars M^2 —(SM^1), no submedian bar R^3 — M^1 , median bar R^3 — M^1 1 to $1\frac{1}{2}$ mm. more distal than median bar M^1 — M^2 , 3 mm. from base of M^1 , slightly curved, bar R^2 — R^3 a little more proximal, bars SC^3 — R^1 $6\frac{1}{2}$ mm. from apex of cell, forming one continuous, oblique, straight line, bar R^1 — R^2 more distal, small, convex distad; discal bars SC^4 — M^2 widely separated from one another, small, the upper two, which are the heaviest, with drab coloured patches at proximal side, bar R^2 — R^3 generally a mere dot, bar R^3 — M^1 mostly curved, no discal bar M^2 — SM^2 , the discal interspaces milky white, much wider than the median ones, proximal portions of postdiscal interspaces also white, fused with the discal ones, so that the discal bars R^1 — M^2 are placed within the white area, rest of postdiscal interspaces drab colour with a series of internervular, cadmium yellow, spots which decrease in size costad and are distally bordered by the black postdiscal bars, of these latter bars SC^5 — R^3 are minute, bars SC^3 — SC^5 subtriangular, bars M^2 — SM^2 fused to one, nearly quadrangular, patch, the diameters of which are about 2 and 3 mm.; submarginal bars tawny olive, uniform, convex distally, $1\frac{1}{2}$ mm. from edge of wing between veins, last three less curved, last two joined together and more black, submedian interspaces ecru drab with darker centres, posterior ones like posterior admarginal interspace shaded with pale blue; marginal line drab; longitudinal, whitish, dashes at ends of internervular folds.—Hindwing: basal costal bar vestigial, close to base of wing, PC edged with rufous chestnut, no submedian and median costal bars; all the basal to median bars thin, except bars C — SC^2 , which are close together, and cell-bar 2, as well as upper portions of cell-bar 4; subbasal bar M^1 —(SM^1) joined along (SM^1) to submedian bar, median bars M^2 —(SM^1) and (SM^1)— SM^2 both curved basad near (SM^1), the prolongations soon fused to a line which extends to submedian series; median bar SC^2 — R^1 at or beyond D^2 , bar R^2 — R^3 about 1 mm. more distal than bar D ; discal bars black, uniform, the upper three heavier than the others, bar R^2 — R^3 the most distal of the series, bars M^2 — SM^3 almost straight, slightly oblique to veins, somewhat inclining basad posteriorly; discal interspaces drab colour at discal bars, this colour filling up the greater part of interspaces R^2 — M^2 , while the rest of the discal interspaces (as well as cell) is creamy white; postdiscal bars thin, uniform, the series parallel to the discal one, but the upper three bars are little wider apart from the discal ones than bars R^2 — M^2 , postdiscal interspaces obscurely cadmium yellow and greenish buff, the upper ones more yellow than the others; admarginal black bars shaded with pale blue, upper three straight, but not continuous, the following ones more distal (owing to the form of the wing) and also heavier, except bar M^1 — M^2 which is nearly entirely replaced by blue scaling; white submarginal spots larger than the black ones, submarginal interspaces ecru drab; admarginal interspaces C — R^2 cadmium yellow, well-defined, edged with creamy white, the others greenish buff, more or less white at veins; tails long, upper one pointed, 4 to 7 mm. long, second of nearly even width, 6 to 11 mm. long.

♀. Larger than ♂, body above as in ♂, or olivaceous tawny. Wings broader than in ♂, tails longer. Upperside of wings umber brown towards base, or basal area rufous tawny; markings larger than in ♂.—Forewing: markings yellowish buff or orange buff, discal band paler behind, discal and postdiscal spots SC^5 — R^3 more or less fused together to long streaks, discal bars R^3 — M^1 absent or vestigial.—Hindwing: discal band like that of forewing, rather paler; submarginal spots as in ♂, larger; admarginal spots C — R^1 more or less tawny, sometimes faint.

Underside: as in ♂, submarginal pale blue patches R^2 — SM^2 of hindwing large.

Length of forewing; ♂, 34—39 mm.

” ” ♀, 39—45 mm.

Tenth tergite of abdomen (♂) rounded triangular, subtruncated, with the trace of a sinus; clasper slender, almost gradually narrowed to a point from beyond middle to end, the apical third very slender, slightly curved mesiad, armed on the dorsal edge by a tooth which points sharply mesiad (Pl. VIII. f. 36); penis-funnel short, narrow, apex convex dorsally, extreme tip suddenly narrowed and curved downwards, forming a sharp hook; penis with a dorsal series of teeth, the proximal teeth a little larger and placed towards the left side.

The seventh ventral segment of the abdomen of the ♀ (Nov. Zool. V. p. 559, f. 14) convex in middle postically forming a cavity at the mouth of the vagina.

Hab. East Africa, from Natal (?) to Abyssinia, and from there to Senegambia and the hinterlands of the West Coast as far south as the Niger; not known from the true West African forest region. A rather common insect in British Central Africa. In the Tring Museum 50 ♂♂, 9 ♀♀ from: Gold Coast; Bathurst; R. Gambia; Abyssinia; Wakibara, Unyoro, 9. vii. and 23. vii. '97 (Dr. Ansorge); Ndi, Brit. E. Afr., 20. iii. '95 (Dr. Ansorge); Kilwezi, 5. ii. '95 (Dr. Ansorge); Zomba, Nyassaland, xii '95 (Dr. Percy Rendall); Likoma, Nyassaland, 1. vi., 2. vi., 12. vi., 15. vi., 16. vi., 17. vi., 3. vii., 11. vii., 15. vii., 17. vii., 20. vii., 21. vii., 1896 (Rev. Dutton); Lauderdale, Nyassaland; Chipaika Estate, Bandawe, Nyassaland (F. Watkinson); Delagoa Bay, vi.; at various places between Lialui and Njoko, Upp. Zambesi, iv. '98 (Coryndon); Calweha R., Angola, 29. iii., 15. iv., 30. iv., 1. v., 11. v., 12. v., 20. vi. '98 (Penrice); Olimbinga R., Angola, 3. iv. and 2. v. '98 (Penrice); Benguella to Caconda, Angola, v. '97 (Penrice); Natal (Felder; correct?); Zambesi (Felder).

The similarity between the ♀ of *Ch. achaemenes*, *Ch. guderiana*, and ♂♀ *Ch. pelias saturnus* is very striking (see Nov. Zool. VII. t. 12. f. 1. 2. 3.).

Mr. Coryndon, when trekking down the Zambesi from Lialui, observed this species being often attracted by the meat (antelopes, etc.) hung on to the waggon; he found it also feeding on the trunk of a small wounded tree.

*j*². Bars in basal half of *underside* thin, black, seldom tawny, but in the latter case not edged with black; or partly absent.

*o*³. Discal bars of fore- and hindwing, below, black, regularly arched.

*o*⁴. Discal bars M¹—SM² of forewing below absent, or vestigial, placed within a white disco-postdiscal band; fore- and hindwing below with red or yellow postdiscal spots.

*k*⁵. Band and spots of upperside cream colour or yellow.

67. *Charaxes fabius*.

Papilio Eques Achirus fabius Fabricius, *Spec. Ins.* II. p. 12. n. 47 (1782) (India).

♂♀. *Body above* bistre brown, thorax slightly olivaceous; *underside* creamy buff to clayish buff, palpi paler.

♂. *Wings, upperside*: brownish black, bistre brown at base, with creamy white or deep maize yellow markings.—Forewing rather pointed; a band of three patches runs straight across veins from M¹ to internal margin which it reaches beyond middle; these patches are homologous of the discal and postdiscal interspaces which are fused together, the band is continued costad and apical by two series of spots, an inner, discal, series, of which spot R³—M¹ is often absent, spot

R²—R³ stands closer to cell, and spots SC⁴—R², often partly absent, are placed at $\frac{1}{3}$ of the way from cell to apex of wing; and an outer, postdiscal, series of 4 or 5 spots running apicad but curving costad at SC⁵, spot SC⁴—SC⁵ often absent; a series of submarginal dots, becoming minute or obsolete costad, the last three always present.—Hindwing: an almost straight discal band, which is pale in front, extends from costal margin to M² or (SM¹), its inner edge crosses M at origin of M¹, its width variable according to locality; a series of small white or yellowish submarginal spots, the last two with some blue or olive buff scaling at outside; admarginal spots maize yellow or creamy, narrow upon internervular folds or divided into triangular spots, spot C—SC² always absent, often also the next one, the last one or ones mostly olive buff.

Underside: ecru drab or fawn colour, the outer region sometimes deeper drab colour or shaded with tawny olive, bars black.—Forewing: cell-bar 1 absent, 2 a dot, 3 represented by two spots or complete, 4 nearly straight or angled; bar D not, or little, dilated in front; submedian bar not distal of base of M¹, generally midway between bases of M¹ and M², submedian bar R³—M¹ absent; median bars R³—SM² at right angles to veins (or nearly so), bar M¹—M² sometimes arched, bar R²—R³ in front of R³—M¹ or more proximal, bars SC³—R² at nearly $\frac{1}{3}$ the way from cell to apex of wing, discal interspaces at outer side of median bars with creamy white or pale yellow patches, which are partly absent in some forms; discal bars more or less arched, bars SC⁴—M¹ forming the proximal border of postdiscal spots, which correspond in size and position to those of the upperside, discal bar R³—M¹ sometimes very close to median one, with the interspace between of the ground colour; the creamy or pale yellow patches M¹—SM² represent the discal and postdiscal ones fused together, sometimes patch M¹—M² divided by a luniform discal bar into a discal and postdiscal portion; submarginal bars represented by black spots, of which spots M²—SM² form a large double patch, contiguous with this series (and marked even if the submarginal spots are obsolete) is a series of chrome yellow or deep chrome spots which are larger than the black submarginal spots and gradually decrease in size costad; the submarginal patches M¹—SM² with creamy scaling at outside which forms a spot between M² and SM² which resembles the figure 3.—Hindwing: subbasal costal bar and basal cell-spot absent; submedian series stopping at (SM¹), crossing M at, or close to, base of M²; median series somewhat irregular, but nearly straight from costal margin to R³, bars M²—SM² about at right angles to (SM¹), the series reaching M at or a little beyond base of M²; veins SM² and SM³ sometimes partly black; discal interspaces in most forms with creamy white patches at median bars; discal bars thin, arched, lunule R³—M¹ more proximal, R²—R³ more distal, than the others, hence the series angled at R³; the discal lunules followed at 1 to 2 mm. distance by a series of chrome yellow or red halfmoons, of which the second is sometimes obsolete; these halfmoons are contiguous with the black postdiscal bars, which are obliterated in some forms; white submarginal dots C—R² sometimes obsolete, black submarginal bars linear, with blue spots at proximal side, the bars contiguous with yellow or olive buff admarginal interspaces which are paler at veins; tails acute, second at least as long as first.

♀. Like ♂, but larger, wings broader, tails longer and less pointed, the first longer than second, creamy white or yellow marking wider.

Length of forewing: ♂, 30—40 mm.

“ ” ♀, 34—48 mm.

Clasper apically produced into a hook, variable in the different subspecies, the thickened basi-ventral part armed with a tooth or dentate process; penis-funnel curved downwards, forming a strong and sharply pointed hook; penis armed with teeth, dilated, 1 or 2 mm. before the end, into a ridge; tenth tergite bluntly triangular, with the apex more or less sinuate.

Hab. From Ceylon and N. India to Sumatra, Borneo, the Philippines, Celebes, and the Sula Is.; not found in Java, not recently on the Andaman and Nicobar Islands, but recorded by Godart (1823) from the Nicobars (by mistake?).

The sexual armature of the ♂♂ is obviously different in the several geographical races (compare figs. 20—23, 37—44, 50—53 of Plate VIII.).

The species is of an African type and lives in more open country, not in the dense forest.

a. *Ch. fabius lampedo*.

Eriboea lampedo Hübner, *Samml. Er. Schnett.* II. t. 52. f. 3. 4. ♀ (1816-?).

Nymphalis lampedo, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 31 (1850).

Charaxes lampedo, Butler, *Proc. Zool. Soc. Lond.* p. 628. n. 20 (1865); Semper, *Taf. Philipp.* p. 79.

n. 99 (1887) (Mariveles, Luzou; Cebu); id., *l.c.* p. 335. n. 99 (1892) (S.E. Mindanao; Palawan);

Butl., *Journ. Linn. Soc. Lond.* XXV. p. 356. n. 17 (1896) (Palawan).

♂. *Charaxes zephyrus* Butler, *Cist. Ent.* I. p. 5 (1869) (hab. ?); id., *Lep. Erot.* p. 27. n. 4. t. 10. f. 1. (1870).

Nymphalis fabius var. a. *Eriboea lampedo*, Kirby, *Cat. Diurn. Lep.* p. 269. sub n. 18 (1871).

Charaxes fabius var. *lampedo*, Staudinger, *Iris* II. p. 82 (1889) (Palawan).

♂♀. *Wings above*: yellowish olivaceous buff towards base, markings deep maize yellow.—Forewing: discal and postdiscal spots R³—M¹ separate, of the same size, or the discal one somewhat smaller, no streaks in front of discal spot SC⁵—R¹; postdiscal spot SC¹—SC⁵ absent; of the submarginal series spots SC⁴—R³ are absent, spot R³—M¹ is generally obsolete.—Hindwing: discal band somewhat wider behind than between SC² and R², approaching admarginal spots posteriorly; the latter constricted but not divided between veins in ♀, more or less divided into triangular spots in ♂.

Underside: fawn colour.—Forewing: discal bar M¹—M² at least vestigial, arched; yellow postdiscal spots deep chrome colour.—Hindwing: the discal luniform bars all well marked, postdiscal rufous red spots all present, spot SC²—R¹ not obsolete; no black postdiscal bars; median bars bordered white distally, with or without white patches at outer side; admarginal buff spots slightly more yellow or olive buff between veins; tails ♂, first 4, second 5 to 6 mm.; ♀, first 7 to 9, second 5½ to 7 mm.

Length of forewing: ♂, 37—40 mm.

“ “ ♀, 44—46 mm.

Sexual organs of ♂ on Pl. VIII.: clasper (f. 37 side view, f. 38 dorsal view) with a long irregularly dentate subventral process, apex of clasper with a hook of which the outer edge is slightly denticulated, and a short rounded lobe; penis dilated about 2 mm. before the end (f. 20), the dilated dorsal part dentate; penis-funnel short, but slender.

Hab. Philippine Islands: Palawan, 1 ♂, 1 ♀ (Dr. Platen); Mindoro, 1 ♀ (Dr. Platen); Mindanao, 1 ♂, 1 ♀ (Dr. Platen); Luzon (Semper); Cebu (Semper); Mariveles (Semper).

The discal interspaces of the hindwing below are in the Palawan specimens we have seen more extended white than in those from Mindoro and Mindanao, especially

in the ♀; whether this difference is constant, we do not know, as we have not examined a longer series of *lampedo*. Hübner's figure (without locality) agrees best with Palawan examples, while the type of *zephyrus*, which has also no locality, is without distinct white discal band on the *underside* of the hindwing.

b. *Ch. fabius hannibal* (Nov. Zool. V. t. 7. f. 1. ♂).

Charaxes hannibal Butler, *Lep. Exot.* p. 14. n. 3. t. 6. f. 5 (1869) (Tondano; Macassar); Rothsch., *Iris* V. p. 437 (1892) (S. Celebes); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 357. n. 19 (1896) (Tondano; Macassar; ♀ of *echo*?).

Nymphalis fabius var. b. *Char. hannibal*, Kirby, *Cat. Diurn. Lep.* p. 269. sub n. 18 (1871) (Celebes). *Nymphalis fabius*, Pagenstecher, *Ab. Seuk. Gesellsch.* XXIII. p. 403. n. 183 (1897) (Minahassa).

♂ ♀. *Wings above*: with the markings cream colour.—Forewing: discal and postdiscal spots R^3-M^1 of the same size, or discal one larger, sometimes fused together; patch M^2-SM^2 at least twice as long as (in direction of veins) broad; submarginal dots M^1-SM^2 small, the others absent.—Hindwing: band narrowing behind; admarginal spots mostly divided into triangular dots.

Underside: fawn colour.—Forewing: median bar R^2-R^3 continuous with bar R^3-M^1 or very little more proximal; discal luniform bar R^3-M^1 marked, at least vestigial, but bar M^1-M^2 not present, except a vestige of it behind M^1 ; postdiscal yellow spots small, deep chrome colour, sometimes tinged with rufous.—Hindwing: series of median bars straight to (SM^1), with a narrow white band at outside; discal bars well-marked, black, regularly arched, postdiscal rufous red spots all present, no black bars at their outside; admarginal spots smaller than in *lampedo*, farther from margin.

♀. Like ♂, but band of upperside twice as wide, that of hindwing at least as wide behind as in front, approaching submarginal dots behind; admarginal dots R^3-M^1 , or even R^2-M^1 , of forewing vestigial; tails longer, especially upper one.

Length of forewing: ♂, 37—40 mm.

„ „ ♀, 46—48 mm.

Sexual organs of ♂♂, see Pl. VIII.; clasper with a sharp hook and a blunt lobe at apex (f. 39 side view, f. 40 dorsal view), inner ventral armature consists of a rectangular ridge which is not produced into a distinct tooth; penis (f. 21) armed dorsally with a series of teeth, which becomes doubled and trebled, where the penis is dilated, and turns round towards the ventral side where the denticulation is very heavy; penis-funnel slender, much less curved than in *fabius fabius*, suddenly hooked at end (f. 50).

Hab. Celebes: Maros country, S. Celebes, W. Doherty, August—September 1891, 4 ♂♂, 1 ♀; Talaut, W. Doherty, February—March 1892, 1 ♀; Sangir, W. Doherty, February—March 1892, 1 ♀.

In the Sangir examples the rufous red postdiscal spots of the underside of the hindwing are rather larger than in the ♀♀ from Celebes and Talaut.

c. *Ch. fabius mangolianus* Rothsch., subsp. nov.

♀. *Wings above*: with the markings nearly as yellow as in *lampedo*, except the submarginal spots of the forewing, which are creamy white; band of fore- and hindwing from M^1 of forewing to (SM^1) of hindwing narrower than in *hannibal* ♀.—Forewing: more elongate than in *hannibal* ♀, submarginal spots R^1-SM^2 present, spot SC^5-R^1 vestigial, the last two fused together.

Underside : median bars and black postdiscal spots of forewing, and discal arched bars of hindwing obviously heavier than in *lampedo*; discal interspaces of forewing more suffused with white; rufous red postdiscal patch SC^2-R^1 of hindwing absent.

Length of forewing : ♀, 48 mm.

Hab. Mangoli, Sula Islands, 1 ♀ (Dr. Platen); also in Dr. Staudinger's collection.

d. Ch. fabius echo (Nov. Zool. V. t. 7. f. 2. ♀).

Charaxes echo Butler, *Ann. Mag. N. H.* (3). XX. p. 400. t. 8. f. 5. 6. ♂ (1867) (Singapore); Druce, *Proc. Zool. Soc. Lond.* p. 346 (1873) (Malacca); Dist., *Rhop. Mol.* p. 103. n. 1. f. 38 (1883) (Singapore; Mal. Pen.; Borneo); Nicév. & Martio, *Journ. As. Soc. Beng.* LXIV. 2. p. 437. n. 260 (1895) (Selesseh); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 357. n. 18 (1896) (Labuan; Sarawak); Hagen, *Iris* IX. p. 183. n. 241 (1896) (N. E. Sumatra).
Nymphalis fabius var. *c. Char. echo*, Kirby, *Cat. Diurn. Lep.* p. 269. sub n. 18 (1871).
haraxes echo sumatranus Rothschild, *Nor. Zool. V. expl. of Pl.* VII. (1898) (Sumatra).

♂. *Wings above* : slightly olivaceous at base, markings sulphur or cream yellow.—Forewing : discal spots R^3-M^1 and R^1-R^2 absent, only spots SC^5-R^1 and R^2-R^3 being marked; patches M^1-SM^2 rather widely separated; the postdiscal series extending to SC^5 ; last three submarginal dots present.—Hindwing : band very narrow, about $1\frac{1}{2}$ to 2 mm. broad behind SC^2 , narrowing behind or of nearly the same width; submarginal dots very prominent, as large as or much larger than the admarginal spots; the latter separated into small dots.

Underside.—Forewing : discal creamy white patches M^1-SM^2 rather larger than above, no discal patches SC^5-M^1 , but the discal interspaces sometimes suffused with white scaling; discal bar M^1-M^2 absent; postdiscal spots SC^5-M^1 much shaded with drab colour, postdiscal yellow spots chrome colour, the last two generally much larger than the others; cell-bar 3 not distinctly divided into dots, generally complete, cell-bar 4 straight; median bars R^2-M^1 continuous.—Hindwing : median bars $C-R^3$ continuous, with a white band at outside; discal luniform bars bordered with bluish white distally (which is not the case in any of the preceding subspecies), bar SC^2-R^1 sometimes obsolete; postdiscal spots deep rufous red, spot SC^2-R^1 obsolete, or, if marked, more yellow than the others and far apart from discal bar, nearly all the spots with an indication of the black postdiscal bar at outside; black submarginal spots more or less linear.

♀. Like ♂, but the markings of the upperside rather wider.

Length of forewing : ♂, 30—33 mm.

“ “ ♀, 34 mm.

Clasper more widened dorsally at end than in the other forms (Pl. VIII. f. 41. 42.), the internal subventral ridge produced into a short tooth; penis very short, thick, dorsally with 2 to 4 curved teeth about $1\frac{1}{2}$ mm. before the end (f. 22); penis-funnel slender, rather long (f. 51), much less curved than in *fabius fabius*.

Hab. Malay Peninsula, Singapore (*type*), and Borneo : Perak, 1 ♂; Pengaron, S.E. Borneo, 1 ♂; N.E. Sumatra : Selesseh, 1 ♀, 21. xi. '93, and Battak Mts., 1 ♂, 8. vii. '94 (Dr. Martin).

I considered at first the individuals from Sumatra, in which the white discal band of the underside of the hindwing is obsolete, to represent a separate subspecies. but on comparing more material from Borneo and the Malay Peninsula I find that the difference does not hold good in every case.

e. Ch. fabius sulphureus Rothsch., subsp. nov.

Charaxes fabius, Nicéville, *Bull. of India* II. p. 280. n. 570 (1886) (Thoungyeen; Mepley); Adams., *List Burm. Lep.* p. 20 (1889) (Arakan, III. to V.); Manders, *Tr. Ent. Soc. Lond.* p. 526. n. 92 (1890) (Shan States, XII., 5000 ft.); Wats., *Journ. Bombay N. H. Soc.* VI. p. 41. n. 93 (1891) (Pauk to Tilin, X.; Tilin, III.); id., *l.c.* X. p. 657. n. 121 (1895) (Chin Hills, IV.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 356. n. 16 (1896) (pt.; Thoungyeen; Tilin Yaw); Moore, *Lep. Ind.* II. p. 249 (1896) (pt.).

♂. *Wings above*: olive black, more greenish olive towards base; markings brimstone yellow.—Forewing: discal spot R^3-M^1 absent, spot R^1-R^2 absent or minute; postdiscal spot SC^4-SC^5 about as large as spot R^1-R^2 ; submarginal dots marked up to R^3 or R^2 .—Hindwing: band tapering behind, about 3 to 4 mm. broad behind SC^2 ; admarginal spots divided into triangular dots, except anal one which is complete and bluish olive buff.

Underside: ecru drab; postdiscal yellow spots of both wings chrome yellow.—Forewing: cell-spots heavy as a rule, cell-bar 4 angled in middle, bar D heavier than in all the preceding races; white discal spots SC^5-R^1 and R^1-R^2 , and postdiscal ones SC^4-M^1 clearly marked; median bar M^1-M^2 almost straight, discal bar M^1-M^2 very seldom vestigial and then placed close to median one; no white patch between discal and median bars R^3-M^1 ; postdiscal yellow spot SC^4-SC^5 obsolete.—Hindwing: discal interspaces more or less white, this band stopping sometimes at M^2 , sometimes reaching abdominal margin; discal luniform bars bordered with bluish white externally; postdiscal chrome yellow spots all present, bordered outwardly by the olive black postdiscal bars, the spots surrounded with more or less conspicuous greenish olive scaling; admarginal spots yellow between, creamy white at veins, except at veins C and SC^2 ; basal costal bar short, but rather heavy.

♀. Unknown.

Length of forewing: ♂, 32–36 mm.

Clasper similar to that of *fab. fabius*, but the dorsal lobe triangular and more prominent; penis as in *fabius*; penis-funnel short, denticulate beneath (f. 52).

Hab. Tenasserim and Shan States. 3 ♂♂ in the Tring Museum from: Muong Gnow, vii. to ix. '94, Yuuzalun, xi. '91 (Bingham), Thaungyin valley, 14. v. '93 (Bingham).

f. Ch. fabius fabius.

Papilio Eques Achivus fabius Fabricius, *Spec. Ins.* II. p. 12. n. 47 (1781) (India; Mus. Banks); id., *Mant. Ins.* II. p. 7. n. 52 (1787); Gmel., *Syst. Nat.* I. 5. p. 2235. n. 304 (1790).
Papilio Nymphalis fabius Fabricius, *Ent. Syst.* III. 1. p. 64. n. 201 (1793).
Papilio Nymphalis solon Fabricius, *Ent. Syst.* III. 1. p. 69. n. 216 (1793) (hab.?).
Papilio Eques Achivus euphanes Esper, *Aust. Schmett.* p. 238. t. 59. f. 1. ♂ (1785-98).
Nymphalis fabias, Godart, *Enc. Méth.* IX. p. 353. n. 8 (1823) (Nicobar Is.); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 28 (1850) (India); Horsf. & Moore, *Cat. Lep. Ins. Mus. E. I. C.* I. p. 205. n. 416 (1857) (N. India); Kirby, *Cat. Diurn. Lep.* p. 268. n. 18 (1871) (India).
Charaxes fabius, Doubleday, *List Spec. Lep. Ins. Brit. Mus.* I. p. 110 (1844) (N. India); Butl., *Proc. Zool. Soc. Lond.* p. 628. n. 19 (1865) (India; Indian Is.); id., *Cat. Diurn. Lep. descr. by Fabr.* p. 52. n. 10 (1869) (Madras); Moore, *Lep. Ceyl.* I. p. 29. t. 15. f. 1 (1880-81); id., *Proc. Zool. Soc. Lond.* p. 238 (1882) (Dharmasala, VII., at sugar); Swinh., *ibid.* p. 130. n. 42 (1885) (Poona, IV. XI.; Belgaum; Bombay, XI.); Nicéville, *Journ. As. Soc. Beng.* LIV. 2. p. 45. n. 52 (1885) (Calcutta); Swinh., *l.c.* p. 425. n. 33. (1886) (Mhow, VI. X.); Doherty, *Journ. As. Soc. Beng.* LV. 2. p. 124. n. 93 (1886) (Kumaon, foot of hills); Wood-Mas. & Nicéville, *ibid.* p. 363. n. 101 (1886) (Cachar, IX.); Nicéville, *Bull. of Ind.* II. p. 280. n. 570 (1886) (pt.; Oudh; Chumba, III.; Mundi, VII. IX.; Sikkim; Assam; Cachar; Calcutta, common; Orissa;

Poona ; Belgaum ; Bombay ; Travancore ; Ceylon) ; Aitk., *Journ. Bombay N. H. Soc.* I. p. 133. n. 26 (1886) (Khandaish ; Tanna) ; Hamps., *Journ. As. Soc. Beng.* LVII. 2. p. 355. n. 82 (1888) (Nilgiris, 3 to 4000 ft.) ; Elwes, *Tr. Ent. Soc. Lond.* p. 368. n. 211 (1888) (Sikkim) ; Davids. & Aitk., *Journ. Bombay N. H. Soc.* V. p. 278. n. 39. t. A. f. 3. 3a (1890) (metam.) ; Betham, *ibid.* V. p. 285. n. 50 (1890) (Centr. Prov.) ; Fergus., *ibid.* VI. p. 440. n. 81 (1891) (Travancore) ; Davids., Bell & Aitk., *ibid.* X. p. 258. n. 66 (1895) (Canara, habits) ; Moore, *Lep. Ind.* II. p. 251. t. 183. f. 1. 1a. 1b. 1c. 1d., 1, p., ♂, ♀ (1896) ; Bntl., *Journ. Linn. Soc. Lond.* XXV. p. 356. n. 16 (1896) (pt.) ; Mhow ; Bombay ; Poona ; Nilgiris ; Madras ; Ceylon) ; Nicév. & Mackinn., *Journ. Bombay N. H. Soc.* XI. p. 377. n. 123 (1897) (Mussorie, IV. and IX., rare).

Nymphalis solon, Godart, *Enc. Méth.* IX. p. 357. n. 24 (1823) ; Donbl., Westw. & Hew., *l.c.* p. 309. n. 26 (1850).

Charaxes solon, Butler, *Proc. Zool. Soc. Lond.* p. 628. n. 22 (1865).

♂. Like *Ch. fabius sulphureus*, but markings of upperside deep maize yellow postdiscal spots of forewing above larger, penis-funnel more evenly convex beneath, not denticulate. There are one or two short streaks in front of the discal spot SC^5-R^1 of the forewing above ; the discal spot R^3-M^1 of the upperside of the forewing is sometimes indicated by an obscure lunule.

♀. Like ♂, but markings of upperside larger, sometimes all the submarginal spots of the forewing present ; discal spot R^1-R^2 of forewing always vestigial, patches M^1-SM^2 touching one another at veins.

Length of forewing : ♂, 33—41 mm.

” ” ♀, 34—43 mm.

Penis (f. 23) compressed, the right side more or less membraneous, a series of teeth above, the most distal rather high, the others forming a ridge ; penis-funnel strongly curved, forming a very sharp hook (f. 53) ; clasper produced into a sharp slender tooth at end, dorsal edge raised before end into a lobe (f. 43. 44.).

Hab. Sikkim (low country) to S. India and Ceylon ; 20 ♂♂, 5 ♀♀.

In the Ceylon specimens the postdiscal interstitial spots of the forewing above are on the whole smaller than in the individuals from the Continent.

l⁵. Band of upperside white, shaded with pale blue at edges.

68. *Charaxes hildebrandti*.

Nymphalis hildebrandti Dewitz, *Noc. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 28. t. 2. f. 16. ♂ (1879) (Angola).

Charaxes hildebrandti, Aurivillius, *Ent. Tidskr.* XV. p. 311. n. 195 (1894) (Cameroons) ; Bntl., *Journ. Linn. Soc. Lond.* XXV. p. 363. n. 32 (1896) (Ondo country, Lagos) ; Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 236. n. 27 (1899) (Ashanti ; Lagos ; Cameroons ; Ogowé R. ; Kuilu R. ; Bena-Bendi, Congo ; Angola).

Charaxes galba Distant, *Proc. Zool. Soc.* p. 709 (1879) (= *hildebrandti* accord. to Distant ; hence “*galba*” nom. max. superfl.).

Charaxes taluggae Holland, *Tr. Amer. Ent. Soc.* XIII. p. 332. t. 8. f. 3 (1886) (Ogowé R.).

♂. *Body above* blackish olive, more russet in front, four dots on head and a line, behind eye white, no dorsal dots on pronotum ; *underside* greyish creamy white, femora blackish above ; antennae chestnut, club black.

♂. *Wings, upperside* : brownish black ; a creamy white band runs across both wings, edged with pale glaucous blue.—Forewing : band separated into spots, except behind, 6 mm. broad at internal margin, tapering in front, spot SC^4-SC^5 often absent, spots SC^4-R^2 a little more distal than the others, 6 to 7 mm. from

outer margin, the band proximally without pale blue edge between $SC^{4,5}$ and M^1 or M^2 ; there is occasionally a vestige of a median bar within patch R^3-M^1 .—Hindwing: band inclusive of pale glaucous blue borders 7 to 8 mm. broad in middle, stopping at (SM^1), no blue scaling proximally between C and R^1 ; submarginal white dots minute, mostly vestigial, anal admarginal interstitial spot linear, blue, a trace of a blue admarginal spot behind R^3 , no other admarginal markings.

Underside: ecrn drab, bars black.—Forewing: cell-bar 2 short, bar 3 represented by two conspicuous dots, bar 4 angled in middle, the angle pointing distad, much nearer base of M^2 than that of M^1 ; bar D very thin; submedian bar $M^2-(SM^1)$ heavy, bar M^1-M^2 about 1 mm. more distal than bar $M^2-(SM^1)$ and than cell-bar 4; median bars $SC^{4,5}-R^3$ almost continuous, very thin, 6 mm. from cell at R^1 , bar R^3-M^1 about 1 mm. more distal, bars M^1-SM^2 gradually a little more proximal, all the bars more or less straight, at right angles to the veins; discal interspaces R^3-SM^2 milky white; discal bars brown, regularly arched, concave distally, thin, vestigial, or absent, bar R^3-M^2 close to median bar, postdiscal interspaces milky white, last ones merged together with discal patches; postdiscal bar (SM^1)- SM^2 represented by a black patch, 4 mm. distant from outer margin, all the others replaced by wax yellow spots, which show distally sometimes vestiges of the black bars; these spots are homologous to the proximal borders of the discal bars, the series about parallel to outer margin, upper ones 5 to 6 mm. distant from it.—Hindwing: no basal and subbasal costal bars, subbasal bar C- SC^2 also absent; submedian series nearly continuous, or more obviously broken at veins, the bars more or less straight; median bars thin, continuous, the line crossing M at base of M^2 , broken at SM^2 , proximal half or more of discal interspaces white; discal bars arched, concave distally, all well marked, of even thickness, the series slightly convex in middle, all the bars with very thin, milky white, distal edges, followed by postdiscal, wax yellow, halfmoons which are bordered distally by the thin, black, postdiscal bars; submarginal white dots larger than above, posterior ones with purplish blue scales at outer side, followed by the black, short, submarginal bars; admarginal interspaces wax yellow, anal one more greyish olive buff; tails acute, upper one 3 to 4 mm., second 2 mm. long.

♀. Unknown.

Length of forewing: 34 to 36 mm.

D^3 of hindwing reaches M before joint of origin of M^1 .

Clasper broad, dorsal edge convex, irregularly notched before end, apex gradually narrowed into a short-pointed hook; the ridge which extends from the end of the hook to the inner surface of the clasper notched, appearing denticulated; tenth tergite rounded.

Hab. West Africa from the Gold Coast to Angola. In the Tring Museum 4 ♂♂ from the Kailu R., French Congo, and from Leopoldville.

Resembles on the upperside *Ch. brutus*.

Specimens from N. Angola have generally more pale blue scaling on the hindwing than those from the countries farther north.

p^1 . Discal bars M^1-SM^2 of forewing below present; if absent (some ♀♀), admarginal interspaces C- R^3 of hindwing occupied by thin, linear, rufous red bars.

m^5 . Median bars SC^3-SM^2 of forewing below not continuous, bar R^2-R^3 being more proximal than the others.

- m*⁶. Hindwing above with broad postdiscal, blue, band in ♂ ; ♀ ♀ unknown, except that of *guderiana*, which bears on upperside a close resemblance to *Ch. pelias* (see Nov. Zool. VII. t. 12).
- y*⁷ Forewing without large white submarginal spots ; admarginal interspaces C—R³ of hindwing above not white.
- c*⁸. Forewing above with a series of discal and a series of postdiscal blue spots.
- c*⁹. Forewing above without obvious pale blue marginal patches ; median and discal interspaces of underside more or less glossy white.

69. *Charaxes blanda* (Nov. Zool. V. t. 6. f. 3. ♂).

Charaxes blanda Rothschild, *Nov. Zool.* IV. p. 507. n. 1 (1897) (Mikindani) ; Auriv., *Konigl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 236. n. 25a and p. 538 (1899).

♂. *Body above* olive black, white dots on head and pronotum very prominent ; *underside* creamy buff, palpi and middle of breast creamy white, stripes on breast underneath legs black, anterior tibia black above.

♂. *Wings above* black, with a strong greenish blue gloss.—Forewing : more greenish in basal and internal marginal areas ; shaped as in *guderiana*, but outer margin obviously dentate ; a very small spot in upper angle of cell, a discal row of five somewhat larger spots SC^{4,5}—M², spots R²—R³ however obsolete, being represented only by a very few scales, more proximal than the other spots, a postdiscal series of spots from SC⁴ to internal margin, parallel to outer margin, but curving costad anteriorly, the first six spots small ($\frac{1}{2}$ to $\frac{2}{3}$ mm. in diameter), the last three measuring 1 $\frac{1}{3}$, 2 $\frac{1}{2}$, 3 $\frac{1}{2}$ mm. respectively, the first 9 mm. from apex, the third 5 mm. from outer margin ; all the markings pale blue, the five upper postdiscal ones with large white centres ; no admarginal spots ; fringe restricted white between veins.—Hindwing : a large disco-postdiscal patch pale blue, 9 mm. wide behind, 8 mm. in middle, while its two sections SC²—R² measure 3 $\frac{1}{2}$ and 6 mm. respectively, two pale blue spots before SC², the one in front of the patch, the other more basal and less distinct, behind the latter spot there are a few blue scales between SC² and R¹ ; white submarginal spots thin, linear, shaded with pale blue, the last two with reddish purple ; admarginal interstitial spots transverse, greenish blue, anal one ochraceous, upper ones absent, spots R³—M² continuous, with a yellow tint upon internervular folds ; abdominal fold wood brown, with a greyish white patch before anal angle.

Underside : broccoli brown, paler at base, bars heavy, proximal portions of discal interspaces, the median interspaces, inclusive of the apical interspace of the cell of the forewing greyish white, almost silvery, postdisco-marginal area of forewing also shaded with grey glossy scaling, except a small patch at costal margin, a larger one between M¹ and SM², and a rather broad marginal band which terminates anteriorly at SC⁵.—Forewing : bars nearly in the same position as in *guderiana*, but submedian bar M¹—M² exactly behind point of origin of M¹, hence much nearer median bar M¹—M² than in *guderiana* ; discal bars M¹—SM² black, more proximal than in *guderiana*, the others brown, less conspicuous ; postdiscal bars M²—SM² represented by two elongate, black, patches ; between these and the discal bars two pale blue spots.—Hindwing : discal, arched, bars very prominent, postdiscal bar M²—SM² also very heavy ; white submarginal spots ill-defined, rather large,

transverse, except last two which are very small, with conspicuous blue dots at outer side between R^2 and SM^2 ; admarginal interstitial markings C— R^3 maroon red, with a fine white outer border, the other admarginal spots less sharply defined, yellowish olive buff; anal angle less produced than in *guderiana*, dentition heavy, tails slender, upper one 6 mm., second 7 mm. long.

♀. Unknown.

Length of forewing: ♂, 31 mm.

Clasper essentially different from that of *Ch. etheocles* and allies; the apical lobe of *Ch. etheocles* developed in *blanda* to a tooth, dorsal edge of clasper angled in apical third, dentate (f. 31. 32.); penis-funnel, in a dorsal view (f. 47), with almost parallel sides, then suddenly narrowed, the narrower portion compressed and slightly curved downwards; penis with some minute teeth dorsally, the row beginning about 1 mm. from end, some more teeth on the left side and also a few ventrally about 2 mm. from end; tenth tergite triangular, not sinuate.

Hab. German East Africa: Mikindani, 1 ♂ in the Tring Museum, caught between January and May (Reimer).

*d*⁹. Forewing above with pale blue marginal patches.

70. *Charaxes northcotti* (Nov. Zool. VI. t. 8. f. 5. ♂).

Charaxes northcotti Rothschild, *Entom.* XXXII. p. 171. n. 1 (1899).

♂. *Body above* olive black, bistre brown in front, white dots on head and pronotum conspicuous; *underside* clayish buff, palpi and middle of breast creamy buff, upperside of anterior tibia mummy brown.

♂. *Wings upperside*: black, somewhat olive at base, marked with pale greenish blue and white.—Forewing: a small spot in upper angle of cell, consisting of blue and white scales, another very minute one behind R^2 at outer side of D^3 ; a series of discal spots, upper two white with some blue scales at edges, the third more proximal, spots R^3 — M^2 more or less halfmoon-shaped, spots M^2 — SM^2 vestigial or absent; a postdiscal series of spots parallel to outer margin, upper two white with blue edges and placed more proximal, the spots increasing in size posteriorly; admarginal spots large, pale blue; some dispersed blue scales between discal and admarginal series; fringe white, except at ends of veins.—Hindwing: a large discal patch, narrowing behind, limited by vein R^1 , preceded by a small spot, outwardly concave between veins; white submarginal dots transverse, small, rather heavily bordered pale blue, last ones shaded with reddish purple; admarginal pale blue spots heavy, anal one ochraceous.

Underside: as in *Ch. ethalion*, wood brown, slightly cinnamon, with a silky gloss.—Forewing: discal interspaces greyish at outer side of median bars; postdiscal black patch M^2 — SM^2 prominent, the respective postdiscal and submarginal interspaces grey.—Hindwing: postdiscal interstitial halfmoons not prominent; upper four admarginal interstices rufous red, the others olive yellow.

♀. Unknown.

Sexual organs similar to those of *Ch. etheocles*, the ventral ridge of the penis higher than in fig. 16.

Hab. Hinterland of the Gold Coast, 2 ♂♂: Gambaga, near the Volta R., 28. viii. '98 (Northcott); Kumassi to Cape Coast Castle, iv. '99 (Capt. Giffard).

A third ♂ from the same country in Miss Sharpe's collection.

Colonel Northcott, the discoverer of this species, fell in the battle on the Modder River.

d⁸. Forewing above without blue discal spots between R² and M².

71. *Charaxes kheili*.

♂. *Charaxes kheili* Staudinger, *Iris* IX. p. 216. t. 2. f. 4 (1896) (Njam-Njam); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 237. n. 33 (1899) (Niam-Niam; Zongo; Sassa).

♂. Differs from *Ch. northcotti* in the following points:—

Upperside.—Forewing: more falcate, spot in cell larger, discal series of interstitial spots consisting only of two spots SC⁴⁺⁵—R²; posterior postdiscal and admarginal spots smaller.—Hindwing: the blue band is narrower, though it varies considerably in width, a little farther away from the submarginal dots than in *northcotti*.

Underside essentially as in *northcotti*.

♀. Unknown.

Length of forewing: ♂, 36 mm.

Hab. Njam-Njam, coll. Staudinger; Congo: Zongo, Mokoanghay (Lt. Tilkens), Sassa, Mns. Bruxelles.

h⁷. Forewing above with white marginal patches.

72. *Charaxes guderiana* (Nov. Zool. VII. t. VII. f. 7. ♂, t. XII. f. 3. ♀).

Nymphalis guderiana Dewitz, *Nov. Act. Leop. Cur. Ak. Naturf.* XLI. 2. 2. p. 29. t. 2. f. 18. ♂ (1879) (Angola).

Charaxes guderiana, Trimen, *Proc. Zool. Soc. Lond.* p. 81. n. 37 (1891) (S.-W. Afr.: Omrora, VIII.; Ebanda, IX.; S. Mashonaland); Butl., *ibid.* p. 648. n. 18 (1893) (Brit. C. Afr., I. VIII. XII.); Trim., *l.c.* p. 42. n. 66. t. 5. f. 8. ♀ (1894) (Manica, III. IV.); Butl., *l.c.* p. 561. n. 16 (1894) (Brit. E. Afr., Fuladoya); Reb. & Rog., in Baumann, *Massailand* p. 332. n. 99 (1894) (Ussuri; Sogonoi); Butl., *l.c.* p. 254. n. 14 (1895) (Fwamba, Nyassaland); id., *l.c.* p. 720. n. 9 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 358. n. 21 (1896) (L. Mweru; Zomba; Fwamba; Brit. E. Afr.); id., *Proc. Zool. Soc. Lond.* p. 822. n. 12 (1896) (Deep Bay, Nyassaland); id., *l.c.* p. 852. n. 12 (1896) (Nyassaland); id., *Ann. Mag. N. H.* (6). XVIII. p. 68. n. 4 (1896) (Henga, Nyassaland, I. II.); Lanz, *Iris* IX. p. 142 (1896) (Tanganika); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 238. n. 35 (1899) (Angola; Omrora; Mashonaland; Manicaland; Nyassaland; Mero See; Tanganyika; Ussure; Brit. E. Afr.).

Charaxes pelias Cr. (*sic!*), var. *tanganika* Robbe, *Ann. Soc. Ent. Belg.* XXXVI. p. 133 (1892) (Tanganyika).

♂ ♀. *Body above* in ♂ olive black, russet or wood brown in front, in ♀ all russet, four dots on head, a line behind eye, and two dots at each side of prothorax, white; *underside* varying from greyish white to drab grey, palpi with a thin white ventro-lateral line in the darker specimens, *upperside* of four posterior femora black with rather dense white scaling, anterior tibia brown above.

♂. *Wings, upperside*, black.—Forewing: basal area with a strong, metallic, greenish or purplish blue gloss, a similar gloss near outer margin, but much feebler; a transverse spot in apex of cell, narrowed behind, generally reaching R³, white; two white discal spots SC⁴⁺⁵—R² 6 mm. from cell, mostly preceded by one or two thin white lines; a postdiscal series of spots parallel to outer margin, curving costad anteriorly, spot R²—R³ 4 mm. and spot M¹—M² 3 mm. from outer margin, white, edged with pale blue, especially the posterior ones, spots M² to internal margin mostly entirely pale blue; a series of white admarginal spots, upper

ones elongate, small, spots M^2 — SM^2 merged together to one single, large, patch, all more or less edged with pale blue; fringe white, except at ends of veins.—Hindwing: a pale blue postdiscal band of variable width, upper partitions mostly separated, often obsolete, partitions R^3 — SM^2 more or less convex proximally, regularly concave distally, width of band 2 to $3\frac{1}{2}$ mm. between R^3 and M^1 ; white submarginal dots transverse, with pale blue borders which are in most specimens very heavy and not rarely joined at veins M^1 , M^2 , (SM^1), to the postdiscal band, black bars R^1 — SM^2 separating the postdiscal band and the submarginal spots as thin as, or very much thinner than, the submarginal blue and white markings; admarginal interstices C — R^3 creamy white, heavy, separated by the thinly black veins, often with ochreous dots upon the internervular folds, interstices R^3 — SM^2 pale blue, mostly with creamy white, longitudinal, subtriangular, small spots at veins, and with ochreous dots in middle, anal one nearly all ochreous; abdominal fold brown, greyish near margin.

Underside drab, with a vinaceous tint, shaded with grey except median and a great portion of discal interspaces.—Forewing: cell-bar 2 elongate-ovate, bar 3 represented by two heavy dots, bar 4 somewhat oblique, curved distad in middle, mostly slightly concave near ends, reaching M midway between M^1 and M^2 , a white spot in apex as above, but a little smaller and often less well-defined; submedian bar M^2 —(SM^1) about 1 mm. distal of base of M^2 , bar M^1 — M^2 generally a little more distal than the lower end of cell-bar 4, but often touching it; median bars R^3 — SM^2 gradually 1 or 2 mm. more proximal, bar R^3 — M^1 $3\frac{1}{2}$ mm. from base of M^1 , bar R^2 — R^3 just in front of it or more proximal, bars SC^3 — R^3 5 mm. from cell, with contiguous, white, patches at outside, similar patches often at outside of median R^3 — M^2 , but here mostly reduced to a white line; discal bars arched, all black, well marked, with white spots at outside, which are variable in size and distinctness; postdiscal bars represented by patches, patches M^1 — SM^2 black, often large, the others brown, halfmoon-shaped, concave proximally, upper ones often obsolete; admarginal spots as above, but not well-defined, more buffish.—Hindwing: basal and subbasal costal bars and subbasal bar C — SC^2 absent, submedian and median bars thinner than those on forewing, both costal bars a little more proximal than the respective bars C — SC^2 , the two lines of bars about parallel, concave distally between C and R^3 resp. M , median bars (SM^1)— SM^3 not continuous, at right angles to the veins, or pointing somewhat basad with hinder ends; discal bars regularly arched, black, with heavy, yellowish or greyish olive buff, outer borders, followed by rufous red halfmoons which are distally bordered by the black postdiscal bars, these bars thin, often absent, bar R^1 — R^2 often developed to a patch; white submarginal spots small, transverse, not sharply defined as a rule, posterior ones pinkish, submarginal black bars C — R^3 thin, often obsolete, bars R^3 — SM^2 heavier but shorter, with a blue dot at proximal side; admarginal interstices C — R^3 creamy white, the others white only at veins, all with an ochreous spot in middle; thin marginal line drab; fringe white except at ends of veins; anal angle produced, wing triangular; tails slender, acute, upper one 4 mm., second 5 mm. long.

♀. *Wings above*.—Forewing: brownish black, basal area hazel tawny; a triangular patch in apex of cell, a discal and a postdiscal band of interstitial patches buff yellow; the discal patches R^3 to internal margin large, often contiguous, patch R^3 — M^1 the smallest of them, spot R^2 — R^3 more proximal, small, often absent, spots $SC^{4,6}$ — R^2 about 5 to 6 mm. from cell, contiguous, or very slightly separated, mostly

with one or two thin lines in front; the postdiscal spots all well separated, spot R^1-R^2 $5\frac{1}{2}$ mm. and spot M^1-M^2 6 mm. from outer margin, the series curving costad anteriorly, on the whole almost parallel to outer margin stopping at M^2 , spot $M^2-(SM^1)$ seldom vestigial; admarginal spots all large, dull ochraceous rufous, often paler in middle, spot M^2-SM^2 shaded with bluish white at proximal edge.—Hindwing: basal area rather paler than base of forewing, abdominal fold grey, blackish outwardly, with a grey, ill-defined, rather small patch before anal angle; a black or dark brown median patch $C-R^1$; discal band of forewing continued to (SM^1) , tapering behind, outer edge more or less sinuate between R^3 and M^2 , crossing R^3 proximal of bent; white submarginal spots transverse; upper ones sometimes obsolete, all shaded and edged with pale blue, this blue scaling extended to patches between R^3 and SM^2 ; admarginal interstices as prominent as in ♂, interstices $C-R^3$ orange buff, the others greenish blue, with an orange buff spot upon internervular fold; submarginal bars rather deeper black than disco-submarginal area, bars M^1-SM^2 more or less isolated, often reduced to mere dots; discal bar $C-SC^2$ sometimes vestigial within discal band.

Underside: spot in apex of cell of forewing, and discal band of patches of both wings creamy white, disco-submarginal area of forewing and submarginal area of hindwing shaded with grey.—Forewing: interstitial patches smaller than above, spot in apex of cell often small, shaded with drab, postdiscal interstitial spots reduced to lunules, middle ones creamy white, double one M^2-SM^2 grey; postdiscal bars M^1-SM^2 represented by three black, triangular, patches, the last two contiguous, the other postdiscal bars represented by clayish, indistinct, patches; no admarginal spots, or only vestiges of them.—Hindwing: discal interstitial band much narrower than above, costal median bar in front of median bar $C-SC^2$; admarginal interstitial markings $C-R^3$ rufous orange, R^3-SM^2 olive buff with gallstone yellow centres; tails less slender than in ♂, upper one slightly spatulate, length 6 to 7 mm. and $5\frac{1}{2}$ to $6\frac{1}{2}$ mm. respectively.

Length of forewing: ♂, 29—35 mm.

” ” ♀, 31—40 mm.

Clasper as in *Ch. etheocles*, apical lobe short; penis with a ventro-lateral tooth, not ridge, from this tooth a series of small teeth extends dorsad as in *etheocles*; tenth tergite triangular, rather produced mesially.

Hab. Angola; German S.W. Africa; Manicaland; Mashonaland; Nyassaland; Tanganyika; German and Brit. East Africa. In the Tring Museum 33 ♂♂, 7 ♀♀ from: Angola: Bolombo R. 28. iv., 8. v., 24. vi. '98 (Penrice), Calweha R., 1. v., 15. v. '98 (Penrice), Cabal R., ii. and ii.; '99 (Penrice), Kuhiriri R., xi. '99 (Penrice); Nambooma, Upper Zambesi, iv. '98 (Coryndon); Arlington, near Ft. Salisbury, ii. '95 (Coryndon); Blantyre; Ft. Abercorn, Nyassaland; Zomba, xii. '95 (Dr. Rendall); Chijaiika Estate, Bandawe, Nyassaland, 3. v. '99 (Watkinson); Mineni Valley, Manicaland, 9. and 13. iii. (Selous); Ruanda, Tanganyika, 23. xi. '93 (Dr. Ansonge); Magwangware, 15. i. '94 (Ansonge); Parumbira, 24. x. '93 (Ansonge).

In one ♂ the costal submedian and median bars of the underside are absent, as in *Ch. achaemenes*.

The remaining allies of *Ch. guderiana* with “black” males are a puzzle to Lepidopterists. The authors who have had to deal with them were startled by the great differences between the numerous forms of the female sex, while they vainly endeavoured to discover constant distinguishing characters between the various

males, and hence were inclined to express, more or less tardily, doubts about the number of distinct species being really so large as some authors accepted it to be. Only Dr. Butler speaks with great confidence on the question. He tells us more than once that there is no great difficulty either in distinguishing certain species which others had not recognised, or in mating the sexes correctly. However, in looking over Dr. Butler's various lists of African Butterflies and his Revision of the genus *Charaxes*, it will be noticed that sometimes individuals which Dr. Butler pronounced in one place to belong undoubtedly to one species are, in another paper, referred to a different one. The question of mating and distinguishing the *males* can, therefore, hardly be so easy to solve as Dr. Butler thinks it to be. In fact, it will be seen further on that, for instance, the *males* which Dr. Butler calls *rosae* in his Revision belong partly to *ethalion*, while his *males* of *viola* are not at all the *males* of this form. To show the difficulties that meet here the classifier we mention that eighteen names have been bestowed on the insects under consideration, and that Dr. Butler, in 1896, enumerated these *Charaxes* as ten distinct species (five of which have Dr. Butler as author), while Aurivillius, in 1899, treated them as belonging to six species, of which he did not venture to give distinguishing characters except in the *female* sex. Moreover, "it is singular," as Dr. Butler says, *l.c.*, "that even careful Lepidopterists have agreed in regarding two distinct *females* as sexes in more than one instance." It is indeed surprising that Hewitson (*phaeus*, *cedreatis*), Butler (*alladinis*), Dewitz (*alladinis*), Trimen (*phaeus*), and Standinger (*chiron*) all blundered in describing a *female* as a *male*. But, to us, this shows only that great care should be exercised before one confidently expresses any opinion on these insects.

We are sorry to say that it was the long time we spent on the study of *Charaxes ethalion* and allies and the tawny Indian *Charaxes* which has prevented the speedy publication of this monograph.

Negative results are seldom satisfactory. And almost entirely negative would be the results of our researches in the present group of forms of *Charaxes*, if we considered it the aim of the Lepidopterist merely to find constant distinguishing characters between forms which appear to him to represent distinct species. Very positive and hence satisfactory, however, we find our results, if we regard them from the higher standpoint of the systematist who searches for the degree of blood-relationship of the forms, and of the biologist who wants reasonable explanations of great differences in closely allied insects and of similarities in forms which are not so nearly related.

By comparing a very large material and dissecting a great number of *males* from different localities—there are over 220 ♂♂ in the Tring Museum, about half of which we have examined as to their sexual organs—we feel justified in regarding it as a fact that only two kinds of *males* are constantly distinguishable. And from this fact we draw the conclusion that there are neither ten, nor six, but only two distinct species, the one (*ethalion*) occurring only in East Africa, from Natal to Taveta and most likely farther north, while the second (*etheocles*) inhabits the whole of tropical Africa from Senegambia and Abyssinia to Damaraland, Transvaal, and Delagoa Bay; the former is relatively constant in both sexes, and the latter is polymorphic in either sex, but especially in the *female*.

This result, we confess, is not in accordance with our anticipation. We thought that close researches would show that there were three distinct forms of *males* (not connected by intergraduate specimens): namely (1) *viola* in Senegambia, Abyssinia and East Africa in two subspecies (*viola* and *kiriki*), (2) *ethalion* in

East Africa from Natal to Brit. E. Afr., and (3) *etheocles* all over tropical Africa, except the north and south, in numerous individual varieties. However, the Senegalese *viola males* are, as we have found, not always distinguishable from certain East African examples, and these are gradually connected by intermediate specimens with *etheocles males*. Hence we do not see that there is any justification in classifying these insects as more than two species, *ethalion* and *etheocles*.

The polymorphism, or better, the polychromatism, in the *female* sex of *Ch. etheocles* is astonishingly great, but does not surpass that of certain other *Nymphalidae*, or of *Papilionidae*.

The variously coloured *females* of *etheocles* can be grouped according to the pattern of the upper surface into six main forms, these forms being :

- (1) similar to the ♀♀ or ♂♂ of the many other *Charaxes*, for instance, *ameliae* and *imperialis* ;
- (2) similar to the *male etheocles*, the white markings of the upperside having almost entirely disappeared ;
- (3) similar to the ♀♀ of *Ch. violetta* and *cithaeron* ;
- (4) similar to the ♀ of *Ch. bohemani* ;
- (5) similar to the ♀♀ of *Ch. tiridates* and *numencs* ;
- (6) similar to the ♂ of *Ch. bohemani*.

If we look upon the *females* of *Ch. etheocles* from this point of view, the polychromatism becomes less perplexing, the acquisition of various patterns in the same species assuming a definite meaning. The pattern of form (1) is the normal one from which the other patterns have been derived; it is very variable. If the more or less great similarity between the *females* of this form and other *Charaxes* is due to all these insects having preserved a pattern which approaches the ancestral one, the agreement between the other forms of *etheocles*-♀ respectively with *bohemani*, *tiridates*, etc., must accordingly be the outcome of parallel development caused, as one is wont to say, by the protection which similarity in colour affords the individuals that associate together. Such an association of *etheocles*-♀ with other similarly coloured *Charaxes* is a **fact** observed first by Selons ; but we have very little further information on this point. It need scarcely be mentioned that in a group so difficult to deal with as the present one mistakes as to identification are hardly avoidable ; for this reason the lists of captures are not wholly reliable, and hence there is some difficulty in ascertaining the geographical distribution of the various forms. So much, however, is certain that the various ♀-forms of *Ch. etheocles* have not the same distribution. In this respect it is very interesting to note that, for instance, the ♀-form called *cedreatis* is found only in West Africa, where *Ch. tiridates* occurs commonly, the *female* of which it resembles, and that the forms agreeing in appearance with the sexes of *Ch. bohemani* are also restricted to the area inhabited by this species ; the *females* of form (3) do also not seem to go farther north than the Congo, occurring commonly in East and South-West Africa ; while the form (1), which is the only one met with in the coast districts of Sierra Leone, is apparently very rare in the Congo basin. The ♀-form *kirki* found in British and German East Africa has no representative in West Africa except in Senegambia. It is evident that there is an important geographical element in the variation of *Ch. etheocles*, but the data available do not allow us to differentiate more than two subspecies of *Ch. etheocles*, the one which inhabiting Senegambia and the **Hinterlands** of Sierra Leone, Gold Coast, Niger and probably of the Cameroons (*Ch. etheocles viola*) is monochromatic

in either sex, while the other found in the other districts of tropical Africa is very variable (*Ch. theocles theocles*).

Dr. Butler, in his Revision of *Charaxes*, mentions also seasonal variation. But that was merely a guess; we have no evidence whatever that the individuals treated as such by Dr. Butler are seasonal varieties. On the other hand we know that series of individuals of the *male* sex caught at the same place on the same day exhibit considerable differences.

Ch. theocles has been bred by Dr. Jnnod.

n⁶. Hindwing above in ♂ without a heavy postdiscal band.

7. Penis with a ventral series of teeth; ♀, a series of discal and a series of postdiscal spots on forewing, the posterior discal ones enlarged, no spot in apex of cell.

73. *Charaxes ethalion* (Nov. Zool. VII. t. 12. f. 4. 6. ♀).

Charaxes ethalion Boisduval, in Delegorgue, *Voy. Afr. Austr.* II. p. 593. n. 83. ♀ (1847) (Pt. Natal); Butl., *Proc. Zool. Soc. Lond.* p. 625. n. 15 (1865) (Zulu; Pt. Natal); Gooch, *Entom.* XIV. p. 6. (1881) (Natal); Trim. & Bowk., *S. Afr. Butt.* I. p. 342. n. 114 (1887) (Cape Colony; Caffraria; Natal; Delagoa Bay); Butl., *l.c.* p. 255. n. 15 (1895) (Zomba); id., *l.c.* p. 720. n. 10 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 362. n. 31 (1896) (pt.; Caffraria; Natal; Zulu; Delagoa B.; Zomba); id., *Ann. Mag. N. H.* (6). XVIII. p. 68. n. 5 (1896) (Nyassaland); Staud., *Iris* IX. p. 218 (1896) (Natal; Nguru; Germ. E. Afr.); Dist., *Ann. Mag. N. H.* (7) I. p. 51 (1898) (Barberton).

Nymphalis erithalion Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* t. 48. f. 1 (1850).

Nymphalis ethalion, id., *l.c.* p. 309. n. 21 (1850) (Pt. Natal; Zulu); Trim., *Rhop. Afr. Austr.* p. 170. n. 98. and p. 340 (1862-66) (Pt. Natal); *Science Gossip* p. 281 (1883).

Nymphalis erythalion (!), Lucas, in Cheny, *Enc. d'Hist. Nat., Pap.* p. 152. f. 267 (1851-53).

Nymphalis ephyra, Trimen, *Rhop. Afr. Austr.* p. 340 (1866); Kirby, *Cat. Diurn. Lep.* p. 269. n. 22 (1871) (pt.; Natal).

Charaxes ephyra, Staudinger, *Exot. Tagf.* p. 170. t. 58. ♂ (1886) (pt.; Natal); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 56 (1894) (sub syn.).

Charaxes theocles var. *ethalion*, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 237. sub n. 34 (1899).

♂. *Charaxes rosae* Butler, *Journ. Linn. Soc. Lond.* XXV. p. 360. n. 25 (1896) (pt.).

♂. *Wings* short, broad.—*Upperside* velvety black, with very little metallic gloss.—*Forewing*: blue spot in cell seldom marked, one discal spot near costa, also pale blue, often absent, one postdiscal dot of the same colour, often wanting, seldom followed by a second dot.—*Hindwing*: postdiscal greenish lunules seldom vestigial; admarginal spot C—SC² not marked, the next three either rufous red or greenish olive buff, sometimes very faint, posterior ones yellowish olive buff, often very thin; submarginal white and blue dots small, upper ones vestigial or absent.

Underside clayish fawn colour, often with a vinaceous flush, rather uniform in colour, the discal interspaces being very little paler.

♀. Resembling *Ch. eth. theocles* ♀-f. *theocles*.—*Upperside*, forewing: discal patches larger than the postdiscal ones, the two series widely separated down to M², seldom only to R³, the upper spots yellowish or white, the last patches white, more or less edged and shaded with blue, occasionally quite pale blue; discal spot R²—R³ vestigial or absent; patch at internal margin 8 to 12 mm. long; posterior postdiscal spots mostly very small; no spot in cell; no marginal spots.—*Hindwing*: a broad discal band, white, much shaded with pale blue or all pale blue, extending to base of M² and beyond bent of R³, externally somewhat convex; admarginal spots SC²—R³ bright rufous.

Underside, proximal portions of discal interspaces more or less white, these

white patches often absent from hindwing and occasionally obscure also on forewing; ground varying in tint from clay colour to clayish drab.—Forewing: postdiscal interspaces M^2 — SM^2 mostly white, the other postdiscal interspaces less pale, not so prominent as in ♀-f. *etheocles*; submarginal interspaces M^2 — SM^2 greyish white, forming a patch which resembles the number 3, the other submarginal interspaces less pale, not strongly arched; black postdiscal double patch M^2 — SM^2 as in ♀-f. *etheocles*, but the preceding patches not so well marked as in that form.—Hindwing: postdiscal bicolourous halfmoons smaller than in ♀-f. *etheocles*, the postdiscal bars at their distal side not enlarged to patches.

There are four principal forms of the ♀-sex according to the development of the band of the upperside:

- a. Discal and postdiscal spots and band white, shaded with blue.
- b. Upper spots of forewing buff.
- c. Discal and postdiscal spots R^3 — M^2 not completely separated (Pl. XII. f. 4). Chipaika Estate, Bandawe, Nyassaland, 17. iv. '99.
- d. Band and spots pale blue (Pl. XII. f. 6), except upper postdiscal spots. Taveta (July); Zambesi.

Forms *a* and *b* are the ordinary ones which are in the Tring Museum from Natal, Nyassaland, Delagoa Bay, and Taveta.

Length of forewing: ♂, 29—35 mm.

” ” ♀, 38—42 mm.

The penis differs from that of *Ch. etheocles* constantly in the series of teeth not turning towards the upperside, but remaining ventro-lateral (Pl. VIII. f. 19), the most distal teeth are, therefore, not visible in a view of the penis from the right side.

Hab. Cape Colony, Natal to British East Africa. In the Tring Museum 32 ♂♂, 14 ♀♀ from: Natal, Pinetown (♂♂, ♀♀); Rikatla, Delagoa Bay (♂♂, ♀♀); Lauderdale, Bandawe, Zomba (xii.), Nyassaland (♂♂, ♀); Chipaika Estate, Bandawe (F. Watkinson); Tanganyika (♂♂); Dar-es-Salaam (♂); Taveta, vi. vii. (♂♂, ♀♀); Kibwezi, Brit. E. Afr., 7. iv. '94 (♂) (Dr. Ansonge).

“I met with this interesting *Charaxes*,” says Dr. Trimen, *l.c.*, “sparingly at Port Natal in January and February 1867, but succeeded in capturing female examples only. One of the latter was seated quite on the bare ground, and had evidently only just emerged from the chrysalis. I was attracted to the spot by seeing her flutter downward from a neighbouring tree. Colonel Bowker found both sexes on the wing in the same locality in August 1878. I believe that I noticed a ♂ in the edge of the wood at Knysna, in the Cape Colony, as long ago as 1858, and Mr. Streatfeild, C.M.G., informed me that he took the species in the George district in 1877, and in Kaffraria Proper in 1878.”

- ♂. Penis with the series of teeth turning dorsad distally; ♀, forewing above with white band curved, or basal area blue, or band as in *ethalion*, but cell with apical spot.

74. *Charaxes etheocles* (Nov. Zool. VI. t. VIII. f. 6. ♂. 7. ♀; and Nov. Zool. VII. t. 12. f. 5. 7. 8. ♀♀).

♀. *Papilio Eques Achivus etheocles* Cramer, *Pap. Exot.* II. p. 34. t. 119. f. D. E (1777).

♂. *Nymphalis ephyra* Godart, *En. Mèth.* IX. p. 355. n. 18 (1823).

♂. *Body above* olive black, with a greenish tint, white dots on head and pronotum prominent; *below* varying from clayish buff to creamy white.

Wings, upperside : black, often with a distinct greenish tint, especially in basal area.—Forewing : a spot in apex of cell, one to three discal ones SC^4-R^3 about 6 mm. from cell, spot SC^5-R^1 the largest, a postdiscal series of dots parallel to outer margin, upper two larger and more proximal, all these spots grey blue, postdiscal ones generally more white, the number of these spots variable, sometimes all wanting, while in other examples the postdiscal series is complete reaching to SM^2 , occasionally there is also a discal dot R^3-M^1 marked ; outer margin with or without bluish grey or greenish grey markings, which vary much in size and distinctness.—Hindwing : a series of postdiscal lunules from $R^1-(SM^1)$, bluish grey, or glossy green, seldom with a russet tint, varying from being very distinctly marked to being scarcely traceable ; white submarginal dots shaded at edges with pale green, last two with pale blue ; admarginal interspaces greenish grey, more or less distinct, sometimes vestigial only, interspaces SC^2-R^3 mostly with a rufous bar.

Underside : ground colour varying from greyish white to russet, often vinaceous, mostly with an obvious silky gloss which assumes a greenish tint in certain lights ; bars of basal half black.—Forewing : cell-bar 1 absent, 2 a heavy dot, 3 separated into two dots, 4 oblique, curved distad in middle, reaching M about midway between M^1 and M^2 ; submedian bar $M^2-(SM^1)$ about 1 mm. distal of base of M^2 , bar M^1-M^2 again 1 to 2 mm. more distal, but always proximal of base of M^1 ; median bar M^2-SM^2 curved distad in middle, similar in shape to cell-bar 4, median bar M^1-M^2 concave distally, or straight, $\frac{1}{2}$ to 1 mm. more distal than bar M^2-SM^2 , bar R^3-M^1 at right angles to R^3 , again more distal, while bar R^2-R^3 is $\frac{1}{2}$ to 1 mm. more proximal, median bar R^1-R^2 not continuous with bars SC^1-R^1 ; discal bars regularly concave, upper ones generally less distinct, posterior ones black, postdiscal series parallel to discal one, last bars forming two black patches as a rule, the others are also patch-like, but are less black being generally russet, often vestigial.—Hindwing : basal and subbasal costal bars as well as subbasal bar $C-SC^2$ absent ; submedian and median costal bars a little more proximal than the respective bars $C-SC^2$, occasionally united at costal margin to a half-ring ; no bars beyond SM^2 except the median bar ; discal bars regularly concave, postdiscal ones parallel to them, but seldom well marked, postdiscal interspaces accordingly halfmoon-shaped, the greater distal portions rufous red, these red spots very variable in distinctness, the discal bars externally with a greenish or yellowish grey, or yellowish olive buff border, which is often vestigial only ; black submarginal bars $C-R^3$ transverse, often indistinct, bordered proximally by the white submarginal dots, the following ones appear as black dots to which are joined proximally blue and white spots ; admarginal interspaces $C-R^3$ more or less conspicuously rufous red, edged at both sides with thin, glossy, greyish white, lines, upper half of interspace R^3-M^1 often of the same colour, interspaces R^3-SM^2 yellowish olive buff ; marginal black line thin ; tails acute, upper one generally somewhat longer than the second.

♀. *Body above* olive black, more russet in front ; *underside* of palpi and breast more or less cream colour, abdomen brownish black, or dark clay colour.

Wings above : very variable in pattern, never so black as in ♂, brownish black with a purplish tint, basal half of forewing and nearly the whole hindwing pale tawny olive in one form.—Forewing : a series of discal and another of postdiscal interstitial spots paler than the ground colour, white, buff, tawny olive, or blue, a spot in apex of cell white or buff or pale blue ; the discal spots from R^2 to internal margin and the cell-spot often forming a continuous, curved, band.—Hindwing : with a white, pale blue, or buff band across disc, or without a band ; white sub-

marginal spots mostly larger than in ♂; admarginal interspaces also generally larger, their colour variable, anal one (sometimes the last three) of an olive buff tint, the others more or less tawny orange, this colour sometimes restricted to interspaces C—R³, which occasionally are much shaded purplish black.

Underside: bars essentially as in ♂, median bars R²—M¹ of the forewing mostly absent in the specimens with a curved band; discal and postdiscal interspaces of forewing and the median and discal ones of hindwing paler than in ♂; often a discal band of a bluish white or buffish white colour present; tails longer than in ♂, less acute, upper one often spatulate, sometimes truncate.

Length of forewing: ♂, 30—40 mm.

” ” ♀, 35—44 mm.

Clasper narrowed into a concave lobe (Pl. VIII. f. 33. 34. 35) which is very little curved mesiad, the armature being formed by a sharp long tooth into which the ridge is produced that runs from the ventral edge of the apical lobe to the inner surface of the clasper, this tooth has a ventral position, it projects mesiad and is, therefore, best seen in a dorsal (f. 35), or ventral view (f. 33); tenth tergite not divided, rounded triangular; penis-funnel (f. 45, 46) short, broad, free portion triangular, extreme tip compressed, forming a short, sharp, hook; penis with a triangular, dextro-lateral ridge ventrally about 2½ mm. before the end, this ridge is variable in height and outline, always more or less dentate, an irregular series of teeth of variable size runs on the left side of the penis, from the ridge obliquely towards the dorsal side of the penis, the series ending about ½ mm. before the tip (Pl. VIII. f. 12—18), number, size, and position of teeth variable, the ridge and the portion of side of the penis immediately before it often rinate and rather densely denticulated, while in other individuals this portion is smooth and the series of teeth is regular; but this difference is individual only.

Hab. All over Africa south of the Sahara, except Cape Colony and Natal. In the Tring Museum over 220 ♂♂, and 48 ♀♀.

We distinguish two subspecies: *Ch. etheocles etheocles* and *Ch. etheocles viola*.

a. *Ch. etheocles etheocles*.

- ♀. *Papilio Eques Achivus etheocles* Cramer, *Pap. Ex.* II. p. 34. t. 119. f. D. E. (1777) Sierra Leone; Goeze, *Ent. Beytr.* III. 1. p. 85. n. 59 (1779); Fabr., *Spec. Ins.* II. p. 12. n. 46 (1781) (Afr. occ.); id., *Mant. Ins.* II. p. 6. n. 51 (1787); Herbst, *Naturs. Schmett.* IV. p. 71. n. 157. t. 65. f. 3. 4 (1790); Gmel., *Syst. Nat.* I. 5. p. 2234. n. 299 (1790).
- ♀. *Papilio Nymphalis etheocles*, Fabricius, *Ent. Syst.* III. 1. p. 64. n. 200 (1793) (syn. pro parte).
- ♀. *Eriboea etheoclessa* (!), Hübner, *Verz. bek. Schmett.* p. 47. n. 431 (1816-27).
- ♀. *Nymphalis etheocles*, Godart, *Enc. Méth.* IX. p. 355. n. 17 (1823); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 308. n. 7 (1850) (pt.); Kirby, *Cat. Diurn. Lep.* p. 269. n. 21 (1871).
- ♂. *Nymphalis ephyra* Godart, *l.c.* p. 355. n. 18 (1823) (Afr. occ.; pt.); Doubl., Westw. & Hew., *l.c.* p. 308. n. 8 (1850) (pt.); Kirby, *Cat. Diurn. Lep.* p. 269. n. 22 (1871) (pt.); Mab., *Bull. Soc. Zool. Fr.* I. p. 280 (1876) (Congo; synonym. ex parte); Dewitz, *Nor. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 8. n. 28 (1879) (N. Angola).
- ♀. *Charaxes etheocles*, Thon, *Naturg. Schmett.* p. 74. t. 37. f. 547. 548 (1837); Butl., *Cat. Diurn. Lep. descr. by Fabr.* p. 52. n. 9 (1869) (pt.; *ephyra* = ♂ of *etheocles*?); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 69 (1889) (Kassai).
- ♀. *Charaxes etheocles* (!), Butler, *Proc. Zool. Soc. Lond.* p. 629. n. 23 (1865) (pt.).
- ♂. *Charaxes ephyra*, Butler, *l.c.* p. 629. n. 24 (1865) (pt.); Plötz, *Stett. Ent. Zeit.* XLI. p. 194. n. 106 (1880) (Camerouns; VIII. XII.); Staud., *Exot. Taf.* p. 170 (1886) (pt.); Gold Coast; Gaboon; Angola); Capronn., *l.c.* p. 146. n. 79 (1889) (Gaboon); Godm. & Salv., *Proc. Zool. Soc. Lond.* p. 440. n. 85 (1890) (Aruwimi); Trim., *ibid.* p. 80. n. 36 (1891) (S.W. Afr.:

- Ebanda VIII. IX. ; small) ; Auriv., *Ent. Tidskr.* XII. p. 215. n. 139 (1891) (Cameroons) ; Trimen, *l.c.* p. 43. n. 67 (1894) (Manica, III.) ; Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 56 (1894) (pt.) ; Auriv., *l.c.* XV. p. 311. n. 194 (1894) (Cameroons, III. V. XI. ; *ephyra* = ♂ of *etheocles* ? ?).
- ♀. *Charaxes ephyra*, Butler, *Ent. Mo. Mag.* XI. p. 57 (1874) (♀, Gold Coast ; distinct from *ethalion* !).
- ♂ ♀. *Charaxes etheocles*, Trimen, *l.c.* p. 80. note (1891) (*etheocles* = ♀ of *ephyra*) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 359. n. 24 (1896) (Lagos ; Gold Coast ; Cameroons ; Congo) ; Staud., *Iris* IX. p. 218 (1896) ; id., *l.c.* p. 363. t. 3. ♀ ♀ (1896) ; Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 237. n. 34 (1899).
- ♀. *Charaxes alladinis* Butler, *Cist. Ent.* I. p. 5 (1869) ("♂" ex err.!! ; hab. ?) ; id., *Lep. Exot.* p. 27. n. 5. t. 10. f. 2 (1870) ("♂" ex err.) ; Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371. t. 17. f. 8. ♀. 9. ♀ (1887) (fig. 8 "♂" ex err.!! ; N. Angola).
- ♀. *Nymphalis alladinis*, Kirby, *Cat. Diurn. Lep.* p. 269. n. 23 (1871).
- ♀. *Charaxes cedreatis* Hewitson, *Ent. Mo. Mag.* X. p. 247 (1874) (W. Afr. ; "♂" ex err.!!) ; id., *Exot. Butt. V. Charaxes* t. 5. f. 22. 23. 24 (1876).
- ♀. *Charaxes phaeus* Hewitson, *l.c.* XIV. p. 82 (1877) (Del. Bay ; "♂" ex err.!!) ; Trim. & Bowk., *S. Afr. Butt.* I. p. 344. n. 115 (1887) ("♂" ex err.) ; iid., *l.c.* III. p. 408 (1889) ; Monteiro, *Delagoa B. t.* 1. f. 4 (1891) ; Trim., *Proc. Zool. Soc. Lond.* p. 43. n. 68 (1894) (Manica, IV.) ; Lanz, *Iris* IX. p. 143 (1896) (Tabora) ; Auriv., *l.c.* p. 236. n. 28 (1899) (Del. Bay ; Nyassaland ; L. Mero ; Tabora).
- ♀. *Charaxes kirki* Butler, *Ent. Mo. Mag.* XVIII. p. 105 (1881) (Mamboia).
- ♂ ♀. *Charaxes carteri* Butler, *l.c.* p. 108 (1881) (Accra) ; Godm. & Salv., in Jameson, *Story Rear Column* p. 440. n. 86 (1890) (Nkalama R., IV.).
- ♂ ♀. *Charaxes ephyra* var., Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371. t. 17. f. 10. ♂. 11. ♀ (1887) (N. Angola).
- ♂. *Charaxes kirki* Butler, *Proc. Zool. Soc. Lond.* p. 60. n. 17 (1888) (Foda, X.) ; id., *Ann. Mag. N. H.* (6). VII. p. 42. n. 12 (1891) (Kandara, Germ. E. A., X.).
- ♂. *Charaxes alladinis* Butler, *Proc. Zool. Soc. Lond.* p. 648. n. 19 (1893) (Brit. C. Afr., I. VIII.).
- ♀. *Charaxes manica* Trimen, *Proc. Zool. Soc. Lond.* p. 43. n. 69. t. 4. f. 9 (1894) (Manica) ; Butl., *ibid.* p. 822. n. 13 (1896) (Songwe Valley, III. ; Deep Bay, VII.).
- ♂ ♀. *Charaxes hollandi* Butler, *Ann. Mag. N. H.* (6). XII. p. 266 (1893) (S. Leone) ; id., *Journ. Linn. Soc. Lond.* XXV. p. 362. n. 30 (1896) (S. Leone ; O. Calabar).
- ♀. *Charaxes rosae* Butler, *Proc. Zool. Soc. Lond.* p. 255. sub n. 16 (1895) (Delagoa B.) ; Lanz, *Iris* IX. p. 143 (1896) (Tanganyika).
- ♀. *Charaxes dewitzi* id., *l.c.*
- ♂. *Charaxes phaeus*, Butler, *l.c.* p. 255. n. 16 (1895) (Zomba) ; id., *l.c.* p. 852. n. 13 (1896) (Nyassaland).
- ♂ ♀. *Charaxes phaeus*, id., *Journ. Linn. Soc. Lond.* XXV. p. 361. n. 27 (1896).
- ♂ ♀. *Charaxes chanleri* Holland, *Proc. U. St. Nat. Mus.* XVIII. p. 262. ♂. p. 753. ♀ (1895) (Brit. E. Afr.).
- ♂. *Charaxes ephyra* var. *phaecacus* Staudinger, *Iris* IX. p. 216 (1896) (Germ. E. Afr. ; Niam Niam).
- ♂. *Charaxes ephyra* ab. *catochrous* id., *l.c.* p. 218 (1896) (Cameroons).
- ♂. *Charaxes hollandi*, Sharpe, *Proc. Zool. Soc. Lond.* p. 533. n. 34 (1896) (Walenso, Somaliland, X.).
- ♂ ♀. *Charaxes fulgurata* Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXX. 1. 5. p. 236. n. 30 (1899) (Angola).

As we must regard, according to our researches on the dead specimens, the individuals occurring in the same place so closely related as if they were the immediate offspring of the same mother individual, there is no justification in maintaining that a certain *male* of that series of individuals is the mate of one certain form of *female*. Unless there is evidence to the contrary, we have to assume that the individuals of the same place copulate indiscriminately. The Angola ♂ figured by Dewitz, for instance, is not the mate of only one of the three Angola ♀♀ represented on the same plate, but of all three. Hence we consider it wrong to apply the same varietal name for the ♂ and one of those ♀♀, and other varietal names for the remaining two ♀♀. Such a nomenclature

ture is, moreover, very misleading, if employed in lists of captures, because the use of the same name for a certain ♂-form and for a certain ♀-form obscures the geographical distribution of the varietal forms. For instance, "*alladinis*" is recorded by Butler in his Revision from Lagos, Cameroons and Gaboon; the form inhabits most likely these places, but all the specimens mentioned from there by Butler are *males*, while *alladinis* is the name of a certain kind of *female*. Therefore the record of *males* is no evidence that the particular ♀ "*alladinis*" occurs in Lagos, Cameroons and Gaboon. What we want is a precise knowledge of the distribution of the ♀-form *alladinis*, and this knowledge will not be furthered by employing the name *alladinis* for something that is not the ♀-form *alladinis*. Therefore, in the following synopsis a name employed for a ♂-form will not be used again for a ♀-form.

♂. Variable; transitions between the different forms numerous; form 4 is apparently the most constant of all.

A. Forewing *above*: marginal greenish grey or bluish grey spots large; at least two postdiscal spots.

a. Forewing falcate, *above* with more than two postdiscal spots, the spots not deeply arched; the series mostly consisting of five to eight spots; admarginal spots SC²—R³ of hindwing *above* rather large, greenish grey, with red centres; postdiscal pale bluish green lunules of same wing often heavy, sometimes vestigial. Discal spots R²—M¹ of forewing *above* more or less marked (type), or absent. Reminding one of *guderiana*, but the broad, pale blue, postdiscal band of the hindwing of the latter species consists in the present form of lunules, which are, at the utmost, 1 mm. broad.

1. ♂-f. *picta* Rothsch., f. nov.

We possess this form, which seems to be confined to East Africa, from: Unyoro: Kitanwa, 9. x. '97 (*type*!); Fajao, 25. xi. '97; Kasokwa, 25. viii. '97 and 5. x. '97; Warringo River, 8. and 9. vii. '97; Wakibara, 23. vii. '97; Kiorbezi, 4. i. '98; Kikoyero, 31. iii. '97; Hoima, 23. viii. '97; Fovira, 9. v. '97; Busilika, Bulamwezi, 11. ii. '98; Karunga, Kyanika, Bulamwezi, 20. iii. '97.—Quilimane, Portug. E. A., 23. vii. '93.—A long series, collected by Dr. Ansonge.

b. Forewing *above* with more than two postdiscal spots, but the spots forming deeply arched, greenish, halfmoons, the horns of which reach the marginal spots.

2. ♂-f. *fulgurata*.

Ch. ephyra var., Dewitz, *l.c.* t. 17. f. 10 (1887).

Ch. fulgurata Aurivillius, *l.c.*

c. Forewing *above* with two postdiscal spots; hindwing *above* with the postdiscal spots SC²—R³ heavily red in many specimens; *underside* varying from whitish grey to greyish clay colour; generally somewhat smaller than the form *picta*, sometimes (Angola specimen) resembling in shape

Ch. ethalion.

3. ♂-f. *chanleri*.

Ch. chanleri Holland, *l.c.*

Ch. ephyra var. *phaeacus* Staudinger, *l.c.*

In the Tring Museum from: Unyoro, Fajao, 15. and 20. vii. '97, Warringo R., 8. vii. '97 (Dr. Ansonge); Somaliland: Walenso, Sheik Husein, Upper Shebeli R., 5 to 7000 ft., wet country, 26. x. '94 (Dr. Donaldson Smith). German E. Afr:

Dar-es-Salaam. Rhodesia : Nambooma, Upp. Zambesi, beginning of April 1898, Njoko, April 1898 (Coryndon). Transvaal : Rustenburg, ix. x. '94 (Ayres). Angola : Cnbal R., iii. '99 (Penrice).

One of the Nambooma specimens is figured in Nov. Zool. VI. t. VIII. f. 6 ; the ♂ individuals from that place, as well as the Njoko example, have the underside very much variegated ; the ♀, figured on the same plate, which Mr. Coryndon obtained in practically the same district, has the *underside* more uniform in colour. Our two specimens from Somaliland, Walenso, are the same in size as ♂-f. *picata*.

B. Forewing *above* : marginal spots small, or absent ; if large, there is only one (or no) postdiscal spot.

d. Forewing *above* with two, rather large, postdiscal spots ; *underside* clayish chocolate, very uniform in colour ; wings broad, resembling in shape those of *Ch. ethalion*, but are larger. 4. ♂-f. *cytila* Rothsch., f. nov.

We received a series of this peculiar form from near Bandawe, Nyassaland, some of them being caught in April, and also a few specimens from Ft. Abercorn, Nyassaland. Together with them came the *female* form represented on Plate XII. f. 7, which has precisely the same underside as regards the tint of the ground colour. Several specimens from Angola, caught by Mr. Penrice (Kuhiriri R. and Longa R., Nov. '99), as well as specimens from Zomba in Mr. Adams's collection, agree on the upperside fairly well with this form, but have the underside flushed with a strong vinaceous tint, the forewing being, moreover, more variegated. With these ♂♂ come two kinds of ♀♀, which are mentioned under forms 12 and 13.

e. Forewing *above* with one or no postdiscal spot, or ground colour of *underside* not uniformly clayish chestnut.

*a*¹. Basal two-thirds of *underside* almost white. Upperside : forewing with three dots along costal edge, one or the other of them often absent, seldom all wanting ; marginal dots, if marked, very small ; admarginal spots of hindwing not centred red. 5. ♂-f. *catochrous*.

Charaxes ephyra ab. *catochrous* Staudinger, *Iris* IX. p. 218 (1896).

This is the form of which Dr. Butler says : " Mr. Godart's description (of *ephyra*) is sufficiently good to identify the species with certainty." However, Godart's description seems to us to apply much better to form 8.

In the Tring Museum from : Cameroons ; Warri, Niger Coast Protectorate, v. and vi. (Dr. Roth) ; Leopoldville, Congo ; Unyoro : Fajao, 15. and 16. vii. '97, Wakibara, 23. vii. '97, Karunga, Kyanika, Bulamwezi, 20. iii. '97 ; Masindi, 28. vii. '97 (Dr. Ansorge).

*b*¹. Basal two-thirds of underside not white, the median interspaces always much darker in tint ; discal interspaces of *underside* at outside of median bars and part of submedian interspaces more or less pale clay colour, sometimes almost grey.

*a*². Marginal spots of forewing above absent or small ; ground colour of *underside* broccoli brown. 6. ♂-f. *hollandi*.

Ch. hollandi Butler, *l.c.*

A common West African form, occurring from Sierra Leone to the Congo and British E. Africa ; dated specimens in the Tring Museum from : Rau, Nandi country, 14. iii. '98, and Kabras, Uganda Protectorate, 13. xii. '96 (Dr. Ansorge) ; Warri, Niger Coast Protectorate, 22. viii. '97 ; Kumasi to Cape Coast Castle, iv. '99

(Capt. Giffard); Great Forest of Upper Congo, fifteen days' march from Ft. Beni, 19. v. '99 (Dr. Ansoerge).

*b*². Like preceding, but *underside* with an obvious reddish purple tint, especially on the darker coloured portions of the wings.

7. ♂-f. *carteri*.

Ch. carteri Butler, *l.c.*

Also common in West Africa from Sierra Leone to the Upper Congo; intergradations between this and forms 6 to 10 numerous. This is what Dr. Butler puts as ♂ to ♀-f. *alladinis*. Dated specimens in the Tring Museum from Warri, Niger Coast Protectorate, iv. '96 (Dr. Roth); Yanga, Ituri R., 29. v. '99 (Dr. Ansoerge).

*c*². *Underside* as in 6 or 7; *upperside*, marginal spots of forewing conspicuous, white submarginal dots of hindwing large, one postdiscal dot, the second seldom vestigial; admarginal spots of hindwing without red centres.

8. ♂-f. *ephyra*.

Nymphalis ephyra Godart, *Enc. Méth.* IX. p. 355. n. 18 (1823).

Charaxes viola, Butler (non Butler, 1865), *Journ. Linn. Soc. Lond.* XXV. p. 359. n. 23 (1896) (Ashanti; O. Calabar; Angola).

Distributed over West Africa from Sierra Leone to the Congo basin; resembling the East African forms 1 and 3. In the Tring Museum from: S. Leone (Capt. Stevens); Kumasi to Cape Coast Castle, iv. '99 (Capt. Giffard); Kumasi to Kintampo, iv. '99 (Col. Northcott); Agawasso, Gold Coast, middle of vii. '97; Great Forest on Upper Congo, four days' march from Ft. Beni, 8. v. '99 (Dr. Ansoerge).

*d*². *Upperside*, forewing: spot in cell generally large, the other two costal spots small, the postdiscal one of them mostly absent, marginal spots absent or vestigial, basal area green; hindwing: admarginal spots SC²—R³ more or less ochraceous, or ochraceous rufous. *Underside* dark clay colour, bars heavy.

9. ♂-f. *lutacea* Rothsch., f. nov.

Known to us from the Congo basin and Unyoro. In the Tring Museum from: Lukolele, Stanley Pool; Great Forest, two and three days' march from Ft. Beni, 6. v. '99 and 7. v. '99 (*type*) (Dr. Ansoerge); Fajao, Unyoro, 23. vii. '97 (Dr. Ansoerge).

*e*². *Upperside* violet blue; forewing: with or without marginal spots, costal spots sometimes all wanting; hindwing: admarginal spots obscurely marked. *Underside* as in form 6, seldom as in 7.

10. ♂-f. *violacea* Rothsch., f. nov.

In the Tring Museum from: Kumasi to Mansu, Gold Coast, iv. '99 (Col. Northcott); Ogowé R. (*type*); Bopoto, Congo; Sakarumbi, one day's march from Ft. Beni, Congo Free State, 5. v. '99, and three days' march from Ft. Beni, 7. v. '99 (Dr. Ansoerge); Yanga, Ituri R., 29. v. '99 (Dr. Ansoerge).

Besides these ten forms, which can be subdivided almost infinitely, there exist in collections individuals which agree on the *upperside* with one or the other of forms 5 to 10, but have the ground of the *underside* much more uniform in colour. Two such individuals in the Tring Museum have the *upperside* obviously oily green; the marginal markings of the forewing above and the submarginal dots of the hindwing are as in ♂-f. *ephyra*. A specimen from Buaia, Busiro, Uganda, 24. iii. '99 (Dr. Ansoerge), has the shape and size of ♂-f. *chanleri*, the costal

spots of the forewing are obsolete, and the underside is conspicuously flushed with purple red.

Figs. 12 to 17 of Pl. VIII. represent various penis forms : f. 14, Warringo R. = ♂-f. *picta* ; f. 15, Kiorbezi = ♂-f. *picta* ; f. 13, Nambooma = ♂-f. *chanleri* ; f. 12, Bandawe = ♂-f. *cytila* ; f. 16, Wakibara = ♂-f. *catochrous* ; f. 17, Warri, Niger = ♂-f. *catochrous*.

♀. Polychromatic.

A. Forewing *above* with a discal and a postdiscal series of paler spots, or the spots nearly all absent, base not pale blue, no white curved band.

a. Hindwing with a broad discal band across disc, white, buff, blue.

a¹. Discal and postdiscal patches of forewing merged together, only the upper two or three pairs separated, the band thus formed creamy buff, anteriorly and distally ochraceous ; hindwing with admarginal spots SC²—R³ orange, the following ones olive buff, discal band white, slightly bluish proximally, and with a faint tint of ochraceous at distal edge. *Underside*, discal interspaces white.

1. ♀-f. *kirki*.

(?) *Charaxes viola* Butler, *Ann. Mag. N. H.* (4). XVIII. p. 481 (1876) (Atbara ; *haec forma? aut Ch. etheocles viola?*).

Ch. kirki Butler, *l.c.* (Mamboia).

Ch. chanleri Holland, *l.c.* p. 753. ♀ (Brit. E. Afr. ; Kikuyu ?).

Resembling the Senegalese *Ch. etheocles viola*. It is known from British E. Africa (Kikuyu or Kenia district?), Taveta, May 1891 (Mus. Tring), German E. Africa, Mamboia; possibly the Abyssinian individuals recorded by Butler, *l.c.*, as *viola* belong here also.

b¹. Discal and postdiscal patches of forewing more or less joined together, or nearly all separated, ochraceous ; band of hindwing buffish ochraceous or buff, admarginal spots all orange, except anal one. *Underside* flushed with reddish purple, discal and postdiscal interspaces of forewing with buff patches, discal interspaces of hindwing forming a buff coloured band.

2. ♀-f. *ochracea* Rothsch., f. nov.

Ch. ephyra, Standinger, *Iris* IX. t. 3. f. 6 (1896) (Gaboon).

Occurs in West Africa : Congo (Mus. Tring).

c¹. Discal and postdiscal patches of forewing above as before, upper ones buffish, posterior ones white, slightly bluish ; band of hindwing white, and shaded with blue at edges. Resembling ♀ of *Ch. ameliae*.

3. ♀-f. *etheocles*.

P. E. A. etheocles Cramer, *l.c.*

Ch. ephyra, Standinger, *Iris* IX. t. 3. f. 3. 4 (1896).

A West African form, the commonest in S. Leone ; known from S. Leone, Gold Coast, Cameroons, Gaboon.

d¹. Like b¹ or c¹, but the last discal patch of the forewing and the band of the hindwing blue. Resembles *Ch. imperialis* ♀.

4. ♀-f. *regalis* Rothsch., nov.

Ch. hollandi Butler, l.c. ♀, non ♂.

Ch. ephyra, Staudinger, *Iris* IX. t. 3. f. 5 (1896) (S. Leone).

Occurs on the West Coast : Sierra Leone (*type*), O. Calabar.

*e*¹. Like ♀-f. *regalis*, but forewing : discal patches blue up to R², post-discal spots (except upper two) absent; hindwing: blue band broader, its outer edge convex, parallel to margin of wing. Transition to the individual of ♀-f. *phaeus* with green base, mentioned below.

5. ♀-f. *dewitzi*.

Ch. alladinis Dewitz, l.c. t. 17. f. 8 (1887).

Ch. dewitzi Butler, l.c. Angola.

b. Hindwing without broad discal band.

*f*¹. *Upperside* with a red purple gloss ; spots of forewing more or less ochraceous, the discal and postdiscal series both stopping at M², there being no spots beyond this vein, or the external series continued to internal margin ; proximal series often reduced to two or three spots ; hindwing sometimes with a postdiscal line of ochraceous lunules.

6. ♀-f. *seriata* Rothsch., f. nov.

Ch. ephyra, Staudinger, *Iris* IX. t. 3. f. 2 (1896) (Gaboön).

In the Tring Museum, from the Gold Coast, R. Ogowé, and the Congo.

*g*¹. *Upperside* purple blue, spots of forewing white or whitish blue, or purple, hindwing with indications of blue postdiscal patches.

7. ♀-f. *alladinis*.

Ch. alladinis Butler, l.c.

Ch. ephyra, Staudinger, *Iris* IX. t. 3. f. 1. (1896) (Gold Coast).

In the Tring Museum from the Gold Coast, Lagos and Cameroons.

*h*¹. Like preceding, but hindwing with two red and blue patches.

8. ♀-f. *fulgens* Rothsch., f. nov. (Pl. XII. f. 5).

In the Tring Museum from Sierra Leone.

*i*¹. Like form 6, but more steel blue, especially on hindwing, spots of forewing absent, except a small discal costal spot, which is pale blue, and the vestige of a spot in the apex of the cell.

9. ♀-f. *virilis* Rothsch., f. nov.

One specimen without precise locality in the Tring Museum, labelled W. Afr.

B. Forewing *above* with a curved, white, band, or basal half of wing pale blue as in *Ch. bohemani* ♂.

e. Forewing with white curved band ; basal third of hindwing not pale blue.

*k*¹. Basal area of forewing and greater part of hindwing tawny olive.

Forewing : patch R³—M¹ of band long, patches M²—SM² small, obsolescent ; of the postdiscal series SC⁴—M² of spots only the upper two marked. Resembling ♀ *Ch. tiridates*. 10. ♀-f. *cedreatis*.

Ch. cedreatis Hewitson, l.c.

Ch. carteri Butler, l.c. ♀.

Hewitson's specimens came from Angola and Fernando Po.

In the Tring Museum from the Gold Coast and the Congo.

*l*¹. Basal area of both wings brown, with a metallic gloss ; band of hindwing broad, white or pale blue ; hindwing *below* with or without white discal band.

11. ♀-f. *rosae*.

Ch. alladinis var., Dewitz, l.c.

Ch. rosae Butler, l.c.

In the Tring Museum from Delagoa Bay ; Zomba, xii. '95 (Dr. P. Rendall) ; Taveta, vi. and vii.

d. Basal two-thirds of hindwing pale blue ; forewing with white band.

m¹. Basal area of forewing brown ; postdiscal markings of forewing angle-
or halfmoon-shaped. 12. ♀-f. *lunigera* Rothsch., nom. nov.

Ch. ephyra var., Dewitz, l.c. t. 17. f. 11.

Ch. fulgurata Aurivillins, l.c. (♀, non ♂).

Found in Northern Angola. Type: Dewitz's figure.

n¹. Basal area of forewing blue or greenish blue. Resembling ♀ *Ch.*
bohemani. 13. ♀-f. *manica*, (Plate XII. f. 7).

Ch. manica Trimen, l.c.

Received, together with ♂-f. *cytila*, from near Bandawe, Nyassaland, (F. Watkinson) ; Loanda ; Longa R., Angola, Nov. 1899 (Penrice).

o¹. Band of forewing interrupted at M², patch M¹—M² oblique, blue colour
more restricted than in the preceding form.

14. ♀-f. *vetula* Rothsch., f. nov. (Pl. XII. f. 8).

In the Tring Museum from the Ogoiré R.

e. Forewing without white band.

p¹. Basal areas of both wings pale blue, extending on forewing to point of
origin of M¹, sometimes greenish at base, in which case the upperside
comes near that ♀-f. *dewitzi* ; posterior postdiscal spots of forewing
absent. Resembling ♂ *Ch. bohemani*. 15. ♀-f. *phaeus*.

Ch. phaeus Hewitson, l.c. : Monteiro, l.c. t. 1. f. 4 (1891).

Recorded from Delagoa Bay ; Manicaland, April ; Tabora, German E. Africa.

In the Tring Museum from Hikuenge, Loanda, viii., and "Mozambique
(Monteiro)," the former with the base of the wings greenish ; a third specimen,
from Angola (Penrice), agrees with that from Hikuenge.

q¹. Basal areas grey green blue, not violet at edges, extended on forewing
beyond base of M¹, joining the postdiscal spots M²—SM² which are
not obsolete, postdiscal spots of the same colour, upper two white
proximally ; a series of minute admarginal dots up to R² ; *underside*
with a strong vinaceous grey flush, markings not prominent.

16. ♀-f. *coryndoni* Rothsch., f. nov. (Nov. Zool. VI. t. 8. f. 7.)

I received this peculiar form, together with the ♂♂ mentioned under ♂-f.
chanleri, from Mr. Coryndon, who found it at Gazungula, Upper Zambesi, in
April 1898.

b. *Ch. etheocles* *viola*.

♂. *Nymphalis ephyra* Godart, *Enc. Méth.* IX. p. 355. n. 18. "N. B." (1823) (partim).

♂ ♀. *Charaxes ephyra*, Feisthamel, *Ann. Soc. Ent. Fr.* p. 253. n. 10 (1850) (Casamanca) ; Butl.,
Proc. Zool. Soc. Lond. p. 623. n. 24 (1865) (pt.).

♂ ♀. *Nymphalis ephyra*, Kirby, *Cat. Diurn. Lep.* p. 269. n. 22 (1871) (pt.).

- ♀. *Charaxes viola* Butler, *l.c.* p. 627. n. 16. t. 36. f. 4 (1865) (W. Afr.); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 187. n. 49 (1894) (Adeli, Togo); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 359. n. 23 (1896) (pt.; W. Afr.).
- ♂ ♀. *Charaxes viola* Butler, *Ann. Mag. N. H.* (4). XVIII. p. 481 (1876) (Atbara; *haec subsp?*).
- ♀. *Charaxes chiron* Staudinger, *Exot. Tagf.* p. 168. t. 58 (1886) (Senegal; "♂" ex err.).
- ♂. *Charaxes ephyra*, Karsch, *l.c.* p. 192. n. 56 (1893) (Adeli, Togo).
- ♂ ♀. *Charaxes theocles* var. *viola*, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 238. sub n. 34 (1899) (pt.).

♂. Small, resembling *Ch. theocles theocles* ♂-f. *chanleri*, wings more elongate.—*Upperside*, forewing: cell-spot always present, rather large, discal spot SC^5-R^1 also heavy, mostly accompanied by a line in front and a dot behind; two postdiscal dots, of which the second is seldom absent, occasionally traces of two more dots; marginal spots large, more or less fused together.—*Hindwing* more triangular than in the other West African specimens of *Ch. theocles*, admarginal spots rather heavy, spots SC^2-R^3 paler, often with orange red centres, broader than the space between them and the white submarginal dots; black submarginal dots R^3-SM^2 obvious on account of their deep black colour; postdiscal line of lunules $R^1-(SM^1)$ always present.

Underside clayish eern drab, rather uniform in colour, median interspaces scarcely darker than base.

Underside of breast, especially of metasternum, as pale as the palpi; abdomen little more buffish.

♀. Resembling *Ch. theocles theocles* ♀-f. *kirki*. *Wings above* purplish brown.—*Forewing*: a series of discal and one of postdiscal spots, spots SC^4-R^2 separate, or spots R^1-R^2 connected by tawny scales, the others merged together to a band which is cut by the brown veins, the band is 7 to 8 mm. broad at internal margin, is about 5 mm. from outer margin and, at M^2 , 8 mm. from cell, mostly whitish at internal margin; patch R^2-R^3 often subdivided by brown scales, sometimes the proximal portion absent, patches R^3-M^1 occasionally also with tawny brown scales in or near middle; outer margin with a series of large, but rather obscurely marked, tawny spots.—*Hindwing*: a broad, white, discal band, posteriorly shaded with pale blue or violet, measuring 6 to 7 mm. at SC^2 , 14 mm. along M^2 , the black postdisco-submarginal area reduced to a band which becomes very narrow behind and measures only 4 mm. in front; white submarginal dots large, edged externally with blue, especially last ones, black submarginal dots R^3-SM^2 conspicuous; admarginal spots $C-R^3$ orange ochraceous centred with orange, the others greenish olive buff, often yellowish in middle.

Underside clayish eern drab.—*Forewing*: discal and postdiscal interspaces of forewing creamy buff, discal luniform bars feebly marked, posterior ones obsolete.—*Hindwing*: discal interspaces paler than on forewing, but not sharply marked; postdiscal interstitial halfmoons not prominent, their proximal halves cream buff or pale straw yellow, distal halves dark cinnamon rufous.

Length of forewing: ♂, 30—33 mm.

” ” ♀, 34—37 mm.

Triangular ridge of penis much reduced in height (Pl. VIII. f. 18).

Hab. Senegambia and the Hinterlands of the West Coast, probably as far south as Cameroons. In the Tring Museum 9 ♂♂, 6 ♀♀ from: Bathurst; R. Gambia; Gambaga, near Volta R., 28. viii. '99 (Col. Northcott); Gambaga, Nov. Dec. '98 (Capt. Giffard).

A ♂ specimen in the Tring Museum labelled "Cameroons" agrees with *viola*.

Both sexes of this form were described by Feisthamel in 1850 as *ephyra*. Dr. Butler, in 1865 and 1896, failed to recognise the identity of Feisthamel's insect with his own *viola*. What Dr. Butler considered in 1896 to be ♂♂ of *viola* are *ephyra* Godart, not *ephyra* Feisth. = *viola* Butl. Aurivillius, with wonted carefulness, put the synonymy right.

n⁶. Median bars of fore- and hindwing continuous.

o⁶. Upperside with a very strong blue gloss (♂).

75. *Charaxes thysi*.

Charaxes thysi Capronnier, *C. R. Soc. Ent. Belg.* XXXIII. p. 125. n. 70 (1889) (Kassai); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 374. n. 66. and p. 364. sub n. 33 (1896); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 236. n. 26. t. 5. f. 7 (1899) (Congo).

♂. Body *above* olivaceous black, head and pronotum with the usual white dots; *underside* buffish white, abdomen rather darker.

♂. *Wings above* black, with a strong hyacinth blue gloss.—Forewing: a postdiscal campanula blue band from SC⁵ to internal margin, composed of seven spots, the first, third and fourth a little more proximal than the others, the band gradually broader behind, patch M²—SM² measuring 3 mm. in width.—Hindwing: band of forewing continued across disc to abdominal fold, its proximal margin convex before cell, where the band is 4½ mm. broad, its outer margin nearly straight, but indented upon the veins; a series of purplish blue submarginal dots; admarginal interstitial markings transverse, purplish blue, extending into tails, where they become whitish, anal one olive grey; abdominal fold pale brown, a triangular, grey, patch beyond end of SM³.

Underside silvery white.—Forewing: cell-bars similar to those of the allied species, bar 4 bent distad in middle; submedian bar M²—(SM¹) just behind base of M², submedian bar M¹—M² proximal of base of M¹; median bars forming a nearly continuous line, 2½ mm. distant from cell at R², only 1½ mm. at R³; discal bars situated in a brown band which runs from costal to internal margin, is nearly straight, begins 11 mm. from apex of wing and crosses SM² 6 mm. from its end; to this band is joined a large, double, blackish brown, patch M²—SM²; postdiscal bars, bars SC³—M¹ represented by a pale brown, rather indistinct, zigzag line, while bar M¹—M² is larger, blackish, and halfmoon-shaped; outer margin brown; submarginal, white, interspace M²—SM² resembling the number 3.—Hindwing: basal and subbasal costal bars, and subbasal bar C—SC² absent; submedian and median bars forming two nearly continuous lines, pale russet wood brown; the series of discal and postdiscal bars parallel, situated in a faintly curved, tawny, band of 2½ mm. breadth, nearly parallel to outer margin, crossing C 3 mm. from its end, discal bars linear, curved, postdiscal ones more rounded, except the last ones which are also linear and curved; submarginal bars abbreviated, but transverse, last two rounded, minute; admarginal, interstitial, markings transverse, ochraceous, bordered at both sides with a very thin white line, anal one olive; tails slender, acute.

♀. Unknown.

Length of forewing: 31 mm.

Hab. Kassai, Congo Free State (Capt. Thys), in Mus. Bruxelles, Mus. Stockholm, coll. Staudinger.

The scales in the basal area of the forewing *above* have very short teeth, those in the outer half have scarcely any teeth.

*p*⁶. Blue gloss of upperside not strong.

*k*⁷. ♂ with pale blue band, ♀ with white band.

76. *Charaxes baumanni*.

Charaxes baumanni Rogenhofer, *Verh. Zool. Bot. Ges. Wien.* XLI. p. 564. ♀ (1891) (Pare); id., in Baumann, *Usambara* p. 328. n. 88 (1891); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 236. n. 25 (1899) (Manicaland; Zomba; Usambara).

Charaxes whytei Butler, *Proc. Zool. Soc. Lond.* p. 649. n. 20. t. 60. f. 2. ♂ (1893) (Zomba, I. XII.); id., *l.c.* p. 14 note (1894); Trim., *ibid.* p. 607 (1894); Butl., *l.c.* p. 255. n. 17. t. 15. f. 3. ♀ (1895) (Zomba); id., *l.c.* p. 720. n. 11 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 363. n. 33 (1896) (Zomba).

Charaxes selousi Trimen, *Proc. Zool. Soc. Lond.* p. 45. n. 72. t. 6. f. 10. ♂ (1894) (Manicaland).

Charaxes ethalion, Butler, *l.c.* p. 362. n. 31 (1896) (pt.).

♂ ♀. *Body above* dark olive, four dots on head, a line behind eye, and two dots at each side of prothorax white; *underside* clay colour, palpi and middle of breast more creamy buff, upperside of anterior tibia of ♀ black.

♂. *Wings above* black.—Forewing: a postdiscal series of white spots parallel to outer margin anteriorly curved costad, upper spots minute, edged with pale blue, last ones larger, merged together to a band which is about 5 mm. wide at internal margin, nearly all whitish blue, 3 mm. distant from outer margin before SM².—Hindwing: a broad disco-postdiscal blue|white band, tapering at both ends, its inner edge somewhat convex, especially posteriorly, crossing M at base of M¹, its outer edge nearly parallel to outer margin; a series of white, minute, submarginal dots; admarginal interstitial markings transverse, continuous or subcontinuous, tawny, shaded with blue at edges, anal one yellow, spot C—SC² absent, the next one abbreviated.

Underside russet wood brown, glossy, except at outer margin of forewing and in disco-postdiscal area of hindwing.—Forewing: cell-bar 2 short, bar 3 separated into two dots, bar 4 straight, somewhat oblique; bar D thin; submedian M²—(SM¹) behind point of origin of M², bar M¹—M² about 1½ mm. more distal; median bars more or less straight, continuous, the line straight, crossing R³ about 1 mm. from crossveins, M² 5 mm. from its base, bordered white distally, the white scaling forming an ill-defined band; discal bars represented by an obsolete line which becomes more prominent on account of the scaling at its proximal side being deeper in tint than that at its distal side, the line parallel to the median line from R³ to internal margin, 4 to 4½ mm. distant from it, then curving distad and costad; postdiscal bar (SM¹)—SM² represented by a small black patch about 1 mm. distant of discal line, scaling whitish at discal side of the patch; vestiges of pale postdisco-submarginal wings.—Hindwing: no basal and subbasal costal bars and no subbasal bar C—SC², submedian bars continuous, or the line slightly broken at base of R¹; median bars continuous, the line appearing as a continuation of the line of forewing, straight, curving abdominad beyond (SM¹), crossing M² at base, with an ill-defined, narrow, white, band at outer side; discal bars arched, concave distally, middle ones rather feebly marked, bar R²—R³ more distal than the others, often obsolete, the series slightly biconcave; postdiscal bars ill-defined, partly obsolete, parallel to the discal ones, interspaces halfmoon-shaped, cinnamon rufous, olivaceous

proximally; submarginal white dots shaded with blue at edges, small, followed by the black, abbreviated, submarginal bars, which are bordered distally with a thin bluish white line each; admarginal transverse interspaces reddish rufous, contiguous, anal one olive buff, upper one reduced; tail slender, acute.

♀. *Wings, upperside*, black brown.—Forewing: a white discal band consisting of three small spots $SC^{4,5}-R^3$, more or less isolated, at R^2 about 4 to 5 mm. from end of cell, followed by four contiguous patches, patch R^3-M^1 the smallest, triangularly sinuate distally, patch M^1-M^2 of the same length as the following ones, measuring 5 to $5\frac{1}{2}$ mm. along veins, sinuate distally, inner edge of the band, from R^3 to internal margin, almost unbroken, crossing M^2 5 to 6 mm. from its base; a series of white postdiscal spots SC^4-M^1 or SC^4-M^2 , the series forming nearly a right angle, spots R^3-M^2 close to discal band, subuniform.—Hindwing: discal band of forewing continued to abdominal margin, of nearly even width (5 to 7 mm.) down to (SM^1), then much narrower; white submarginal dots more prominent than in ♂, followed by the submarginal bars which are deeper black than the ground of the wing; admarginal interspaces tawny ferruginous, more or less separated at veins, edged with pale blue.

Underside similar to that of ♂, but the white discal band as broad as, or broader than, on upperside; postdiscal area of forewing more or less whitish; postdiscal interspaces $C-SC^2$ and R^3-M^1 of hindwing more or less white, this scaling sometimes extended to outer margin; upper tail not pointed, 6 mm. long, second pointed, 5 mm. long.

Length of forewing: ♂, 28—30 mm.

” ” ♀, 30—33 mm.

Hab. East Africa: Manicaland, Nyassaland, German East Africa, Usambara. In the Tring Museum 1 ♂, 2 ♀♀ from Zomba, xii. 95 (Dr. Percy Rendall), Dar-es-Salaam.

U Upperside black and orange.

77. *Charaxes anticlea* (Nov. Zool. V. t. vi. f. 4. ♀).

Papilio Nymphalis Phaleratus anticlea Drury, *Illustr. Ex. Ins.* III. p. 36. t. 27. f. 5. 6 (1782) (S. Leone).

Papilio Nymphalis horatius Fabricius, *Ent. Syst.* III. 1. p. 64. n. 202 (1793) (*hub.* ♀).

♂ ♀. *Body above* olive black, head and anterior part of thorax somewhat russet, four dots on head, a line behind eye, and two dots laterally on prothorax, white; *underside*, palpi, middle of breast and legs pale clay colour, sides of breast clayish brown, abdomen clay colour, upperside of anterior tibia black, of four posterior femora also black, speckled with white scales.

♂. *Wings above* velvety black.—Forewing: a postdisco-submarginal band cadmium orange, broadest behind, more or less continuous from M^1 to internal margin, partitions SC^5-R^1 separated, often reduced to small spots, the upper ones often absent, the spots sometimes horseshoe-shaped, the band seldom reduced to a small spot M^1-M^2 and a large patch between M^2 and internal margin; black marginal border varying in width between M^1 and SM^2 from $\frac{1}{2}$ to $2\frac{1}{2}$ mm.—Hindwing: outer area cadmium orange, extending down to bent of R^3 , seldom to base of M^1 , the area narrowed costally; a series of black postdisco-submarginal

spots with white centres, the spots seldom so large that they almost touch each other, the middle ones mostly absent, the upper two often joined to the black basi-discal area, a thin, sharply defined, marginal line black; abdominal fold clayish brown.

Underside bistre brown, with a pinkish and rufous tint, basal areas, proximal part of discal areas and part of outer areas, especially in apical region of forewing, with a pinkish grey gloss.—Forewing: cell-bar 2 short, ovate or rounded, bar 3 represented by two heavy dots, bar 4 oblique, curved distad in middle, concave near ends, continuous with submedian bars M^1-SM^2 , submedian bar M^2-SM^2 generally heavy, like the respective median one; median bars more or less continuous, parallel to the submedian series, crossing R^2 close to lower angle of cell, the brown median interspaces band-like; discal bars feebly marked, arched, concave distally, the series about midway between median bars and outer margin, obtusely angled at R^1 ; postdiscal bars M^2-SM^2 represented by two ill-defined, black, patches, which are often preceded by a patch M^1-M^2 ; posterior postdiscal and submarginal interspaces more or less obscurely cinnamon rufous.—Hindwing: no basal and subbasal costal bars, subbasal bar $C-SC^2$ also absent; submedian and median bars forming two continuous lines, which are parallel, costal bars heavier than the others, brown median interspaces band-like; glossy scaling at outside of median line band-like; discal and postdiscal bars arched, parallel, the double series somewhat angled at R^2 , interspaces rufous red, upper ones more olive; black submarginal bars thin, last two small dots, the upper ones obsolete or vestigial, the others concave proximally, edged purplish white distally, white submarginal dots shaded with purple; admarginal interspaces continuous, except upper one which is isolated, rufous red, anal one olive buff; black marginal line edged with bluish white, metallic plumbeous at anal angle; tails short, triangular.

♀. Wings broader, hindwing less triangular, outer margin of forewing less concave than in ♂. *Upperside* dull brownish black.—Forewing: a pale orange disco-postdiscal band anteriorly divided into two discal and three postdiscal spots, while the discal and postdiscal spots R^2 to internal margin show seldom vestiges of a black line separating them; discal and postdiscal spots R^1-R^2 sometimes joined together along R^2 , the band 8 to 10 mm. broad at SM^2 , more or less concave between the veins at both sides.—Hindwing: the band continued to abdominal margin, narrowed beyond (SM^1), very little narrower in front than behind, paler than on forewing, except at outer edge; submarginal white dots seldom all marked, upper ones mostly obsolete, sometimes all obsolete except the last two; admarginal interspaces orange, continuous, interstitial spot $C-SC^2$ sometimes separated, anal one thin, olive buff.

Underside paler than in ♂, bars heavier; discal and postdiscal interspaces of forewing pale buff, except a brown patch SC^3-R^2 at proximal side of discal bars, more than proximal half of discal interspaces of hindwing occupied by creamy band, tails longer than in ♂.

Length of forewing: ♂, 28—31 mm.

” ” ♀, 31—33 mm.

Clasper with the rather broad apex narrowed into a hook which points mesiad; penis-funnel short, narrow, triangular, gradually curved in a side view, apex produced downwards into a sharp, rather long, pointed, tooth; penis armed about 2 mm. from end by a short row of rather heavy dorso-lateral teeth.

Hab. West Africa from Senegambia to Angola and Uganda.

a. *Ch. anticlea anticlea*.

Papilio Nymphalis Phaleratus anticlea Drury, l.c.

Papilio Nymphalis horatius Fabricius, l.c.

Nymphalis anticlea, Godart, *Enc. Méth.* IX. p. 353. n. 9 (1823) (S. Leone); Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. p. 309. n. 13 (1850) (S. Leone); Kirby, *Cat. Diurn. Lep.* p. 268. n. 14 (1871) (S. Leone).

Nymphalis horatius, Godart, l.c. p. 354. n. 13 (1823).

Charaxes anticlea, Doubleday, *List. Spec. Lep. Ins. Brit. Mus.* I. p. 110 (1844) (S. Leone); Butl., *Proc. Zool. Soc. Lond.* p. 627. n. 14 (1865) (S. Leone); Butl., *Cat. Diurn. Lep. descr. by Fabr.* p. 53. n. 11 (1869); Westw., *Thes. Oron.* p. 181. t. 34. f. 5. ♀ (1874) (S. Leone); Schaus & Clements, *Sierra Leone Lep.* p. 8 (1893); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 364. n. 34 (1896) (pt.; S. Leone); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 235. n. 24 (1899) (pt.; S. Leone).

Charaxes horatius, Feisthamel, *Ann. Soc. Ent. Fr.* p. 259. n. 11. ♂, ♀ (1850) (Cazamanca).

♂. Black border of forewing *above* 1 mm. (or less) wide between M² and internal margin.

♀. Forewing *above*, orange patches R¹—R² completely separated; hindwing, orange admarginal markings continuous *above* and *below*.

Hab. Senegambia to the Niger (?). In the Tring Museum 16 ♂♂, 2 ♀♀ from Sierra Leone, vi. vii., '99 (Capt. Stevens); Accra.

As we have not seen specimens from the Niger, we do not know how far south this form extends, but judging from analogy we believe that it does not range farther south than the Niger.

b. *Ch. anticlea adusta* Rothsch. subsp. nov.

Nymphalis anticlea, Dewitz (non Drury, 1782), *Nov. Act. Leop. Car. Ak. Naturf.* XLI. 2. 2. p. 28 (1879) (N. Angola).

Charaxes anticlea, Capronnier, *C. R. Soc. Ent. Belg.* XXXIII. p. 146. n. 82 (1889) (Gabun); Butl. l.c. (part. Angola); Auriv., l.c. (pt.; Cameroons; Gabun; Angola).

♂. Black border of forewing *above* 2 mm. (or more) wide between M² and internal margin.

♀. A ♀ from the Cameroons (Barombi) in the Berlin Museum differs from the Sierra Leone ♀♀ as follows:—*Upperside*, forewing: orange patches R¹—R² not completely separated; hindwing: admarginal orange markings thin, posterior ones separated between the veins, anal one very faint. *Underside*: discal bars heavier, interspaces between them darker; hindwing: submarginal white dots larger than in the ♀ of *ant. anticlea*, posterior admarginal orange spots interrupted between the veins.

Hab. Cameroons to Angola, Congo and Uganda. In the Tring Museum 5 ♂♂ from Kampala (*type*), 21. iii. '97 (Dr. Ansorge), Leopoldville, and Lnkolele, Congo.

In a ♂ from Niam-Niam in Dr. Staudinger's collection the orange area of the hindwing is very wide, extending proximally to the point of the origin of M¹.

p³. Discal bars of fore- and hindwing not regularly arched.

q⁴. Underside not green, scaled.

o⁵. Markings of upperside blue.

q⁶. Cell of forewing above with a large blue patch.

m⁷. Forewing above without conspicuous, blue, marginal patches.

78. *Charaxes mycerina*.

Nymphalis mycerina Godart, *Enc. Méth.* IX. p. 369. n. 65 (1823) (bab?; "N. B" excepted); Lucas, *Lep. Er.* p. 124. t. 65. f. 2 (1835).

- Charaxes nausicaa* Staudinger, *Iris* IV. p. 137 (1891) (S. Leone; Cameroons); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 373. n. 64 (1896) (O. Calabar; R. Ogowé).
Charaxes mycerina, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 73 (1899) (S. Leone; Cameroons; Kuilu; Kassai).

♂ ♀. Head, pronotum and anterior part of mesonotum olive mummy brown, rest of *upperside* olivaceous black, the dots on head white; antennae chestnut; *underside* of palpi and middle of prosternum creamy white, rest of underside clayish creamy buff, abdomen deeper in tint in ♀ than in ♂; legs tawny, with whitish grey scaling, femora nearly black; anterior tibia mummy brown, anterior tarsus creamy white.

♂. *Wings above* blue black, markings pale blue, purplish in side-light.—Forewing: outer margin deeply concave between SC⁵ and M², more produced at SC⁵ than at apex proper; cell blue, except a patch in upper angle, the blue scaling, however, not very dense, especially distally, the black underscales not all covered; two discal spots SC⁴—R¹, 3 mm. from cell, elongate, the upper short and thin, the second 3 to 5 mm. long, 1½ mm. broad; a postdiscal series of five spots, uppermost spot between SC⁵ and R¹, 10 mm. from cell, elongate ovate, 3½ to 4 mm. long, no spots between R¹ and R³, four posterior spots between R³ and internal margin, in a slightly curved series, spot R²—M¹ the smallest, spot M¹—M² rounded, diameter about 1¾ mm., spot M²—SM² sometimes incised distally, subrectangular, diameters 2 and 3 mm., last spot 4 to 6 mm. from end of SM², 4 mm. long.—Hindwing: a discal band from C to (SM¹), narrowing in front, continuous from R¹ to (SM¹), 4 to 5 mm. broad at M¹, partitions C—R¹ isolated, spot C—SC² sometimes very small, 4 to 5 mm. from end of C, inner edge of band crossing M at point of origin of M¹; two or three minute submarginal dots near anal angle; five transverse admarginal spots between R¹ and SM², slightly separate at veins, or contiguous, anal one very thin, spot R¹—R² often divided, a vestige of spot SC²—R¹ sometimes present; abdominal fold blackish brown.

Underside clay colour, rather glossy; median interspaces, and a large, subtriangular, disco-postdiscal area from C to M¹ of forewing and outer margin of both wings bistre brown, hindwing shaded with grey; bars thin.—Forewing: no basal cell-spot, cell-bar 2 absent, cell-bar 3 represented by two small dots, thinly bordered white, the second about 1½ mm. from base of M², bar 4 transverse, very little oblique, slightly irregular, reaching M midway between M¹ and M², its upper end 2½ mm. from base of R¹, ground paler clay colour at proximal side of bar 4 than near bar 3; bar D very thin; submedian bars M¹—SM² continuous with cell-bar 4, forming with it a slightly curved line which crosses M² 2½ mm. from base of M²; median bars SC⁴—SM² continuous, the bars somewhat concave proximally, forming a line which begins 4½ mm. from base of SC^{4,5}, and crosses M¹ 2 mm. from base of M¹, the median and submedian lines parallel behind, divergent in front; median bar M²—SM² straight, or distally concave; discal interspaces SC^{4,5}—R³ shaded with grey, width of this greyish area 2½ mm. at SC^{4,5}, and 5 mm. at R²; no discal and postdiscal bars, but there is a disco-postdiscal, very indistinct, dark clayish line between internal margin and apex of wing, 7 mm. from outer margin at SM², slightly curved, proximally bordered with silvery white scales down to M¹, this scaling reaching outer margin of wing in front.—Hindwing: no basal costal bar, no subbasal bars; submedian bars almost continuous, forming a proximally concave line from costal margin to M which crosses C 2 mm. from PC, and reaches M 2½ mm. from M², bar M¹—(SM¹) near base of M²; bar D extremely

thin ; median bars more or less concave distally, forming a continuous line which is concave distally between costal margin and R^3 , then convex, crossing M^1 close to its base, and reaching abdominal margin 2 mm. beyond end of SM^3 , last bar, however, indistinct ; discal bars merged together to a continuous, tawny olive, line, which is somewhat concave distally, begins 2 mm. before end of C, and terminates at abdominal margin 3 mm. from end of SM^2 ; close to, and nearly parallel with, this line is a postdiscal line between abdominal margin and R^3 , which widens out into an indistinctly defined patch between R^2 and SC^2 , interspace between the two lines clay colour, postdiscal line sometimes only vestigial ; a series of extremely small, white, submarginal dots, the dots about 2 to $2\frac{1}{2}$ mm. from outer margin ; edge of wing very feebly scalloped, tail R^3 represented by a short triangular tooth, no second tail, abdominal angle produced but rounded.

♀. *Wings, upperside*, paler than in ♂, blue brown.—Forewing : outer margin more produced at SC^5 than in ♂, discal and postdiscal spots a little larger, a vestige of a postdiscal spot R^1 — R^2 .—Hindwing : band wider than in ♂, 5 mm. broad at M^2 , patch SC^2 — R^1 not separated.

Underside as in ♂, but costal submedian bar of hindwing about 2 mm. more proximal than bar C— SC^2 ; tail R^3 5 mm. long, broad, subtruncate.

Length of forewing : ♂, 36—37 mm.

” ” ♀, 43 mm.

Clasper produced apically into a narrow, somewhat spoon-shaped lobe, which is not pointed ; penis-funnel (Pl. VIII. f. 48. 49) suddenly narrowed distally, of the shape of a reversed tulip, the compressed apex not forming a hook, but a rounded mesial crest which extends upon the upperside ; penis with a dorsal series of very small teeth, the series turning proximally towards the left side ; tenth tergite bilobed.

Hab. Sierra Leone to the Congo. In the Tring Museum 2 ♂♂, 1 ♀ from: Gold Coast ; Cameroons ; Stanley Pool to Lukolele.

*n*¹. Forewing above with conspicuous, blue, marginal patches.

79. *Charaxes doubledayi*.

Charaxes mycerina, Doubleday (non Godart, 1823), *List. Spec. Lep. Ins. Brit. Mus.* 1. p. 109 (1844) (S. Leone) ; Butl., *Proc. Zool. Soc. Lond.* p. 638. n. 65 (1865) (S. Leone) ; Staud., *Exot. Tagf.* p. 171 (1886) (S. Leone ; O. Calabar) ; Auriv., *Ent. Tidskr.* XII. p. 216. n. 143 (1891) (Cameroons) ; Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893) ; Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 59 (1894) (Togo) ; Auriv., *l.c.* XV. p. 311. n. 200 (1894) (Cameroons, V.) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 372. n. 63 (1896) (S. Leone ; O. Calabar ; Fernando Po ; Cameroons).

Nymphalis mycerina, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 310. n. 40. t. 53. f. 2. ♂ (1850) (syn. excl. ; S. Leone) ; Kirby, *Cat. Diurn. Lep.* p. 270. n. 30 (1871) (pt.).

Charaxes doubledayi Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 74 (1899) (S. Leone, type ; Ashanti ; Togo ; O. Calabar ; Cameroons ; Ogowé R.).

♂♀. Similar to *Ch. mycerina* ; antennae much darker, the blue scaling in the cell of the forewing denser and more extended, forewing with admarginal blue spots, band of hindwing of ♂ not interrupted at R^1 . On the *underside* the cell-bar of forewing more straight, more obliquely placed, its upper end being only $1\frac{1}{2}$ mm. distant from base of R^1 , median bars also straighter, the bistre brown outer marginal band more sharply defined, the clay coloured area between it and the disco-postdiscal

line divided by a band of bistre brown patches ; median bar M^2 — SM^2 straight or distally convex ; costal median bar of hindwing 3 or 4 mm. more distal than bar C — SC^2 ; the white borders of the bars of both wings much more prominent than in *mycerina* ; anal angle less produced.

♀. Differs from *Ch. mycerina* in a similar way as the ♂.

Length of forewing : ♂, 35—42 mm.

” ” ” ♀, 42 mm.

Hab. Sierra Leone to the Congo Basin ; not rare. In the Tring Museum 28 ♂♂ from : S. Leone ; Accra and Mamfé, Begorro ; Calabar ; Cameroons ; Ogowé R. ; Upper Congo.

r^6 . Cell of forewing above without blue patch.

o^7 . Hindwing above with blue band in middle.

80. *Charaxes porthos*.

Charaxes porthos Smith, *Ent. Mo. Mag.* XX. p. 57 (1883) (Cameroons) ; id. & Kirby, *Rhop. Exot.* I. *Charaxes* t. 1. f. 4. 5. ♂ (1887) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 372. n. 62 (1896) (O. Calabar) ; Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 70 (1890) (Cameroons ; Gaboon ; Bena-Bendi, Congo).

Charaxes midas Staudinger, *Iris* IV. p. 135. t. 2. f. 4. ♂ (1891) (Cameroons).

♂. Body as in *Ch. zelica* ; antennae chestnut.

♂. *Wings*, *upperside* blue black as in *mycerina* ; an azure blue band from near apex of forewing to SM^2 of hindwing which it reaches in middle, the band nearly straight, reaching internal margin of forewing 9 mm. from end of SM^2 , separated, on the forewing, into more or less rhomboidal patches, patch R^1 — R^2 about $2\frac{1}{2}$ mm. in width, the others slightly broader, a minute dot before R^1 , on hindwing the band narrows towards costal margin, being $5\frac{1}{2}$ mm. broad along M^2 and $2\frac{1}{2}$ mm. at SC^2 .—Forewing : a small discal spot R^1 — R^2 , 4 mm. from cell, blue, seldom preceded by another spot ; outline of wing as in *zelica*, but outer margin more concave in posterior half.—Hindwing : a series of submarginal dots, dots C — R^1 white, edged with pale blue, the others minute, blue ; vestiges of a blue admarginal line.

Underside vinaceous cinnamon, shaded over with glossy grey ; a rather heavy line of burnt umber colour, faintly bordered black proximally in some places, extends from end of SC^5 of forewing to abdominal margin of hindwing, which it reaches 3 mm. from end of SM^2 , the line crossing SM^2 of forewing and C of hindwing 8 mm. from end, slightly curved at both extremities, with two patches of glossy grey scaling proximally at its upper end ; cell-bars of forewing, and submedian and median bars of both wings as in *zelica*, but a little heavier.—Forewing : outer marginal area less greyish, more pure cinnamon, than rest of wing, slightly deeper in tint between SC^5 and M^1 , especially near margin.—Hindwing : a series of minute, white, submarginal dots, upper two the largest, the last two accompanied distally by a black dot each ; no tails, outer margin very faintly toothed at R^3 , anal angle somewhat produced, but rounded.

♀. Unknown.

Length of forewing : ♂, 38 mm.

Hab. Cameroons ; Gaboon ; Congo. In the Tring Museum 1 ♂ from Carnotville Apparently as rare as *zelica*.

p^1 . Blue band of hindwing beyond middle.

c^8 . Forewing above with a series of spots near the middle of the wing.

81. *Charaxes zelica*.

♂. *Charaxes zelica* Butler, *Ent. Mo. Mag.* VI. p. 28 (1869) (Ashanti?); id., *Lep. Ex.* p. 12. t. 5. f. 3. ♂ (1869); Auriv., *Ent. Tidskr.* XV. p. 311. n. 199 (1894) (Cameroons, V.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 372. n. 61 (1896) (Ashanti?); Auriv., *Kongl. Sc. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 71 (1899) (Ashanti?; Cameroons; Angola).

♂. Body *above* olive black, mummy brown in front; *underside* of palpi, middle of sternum, and anterior tarsi creamy white, breast olive mummy brown, four posterior tibiae and abdomen cinnamon, femora black, with white scales, tarsi clayish buff.

♂. *Wings above* blue black, glossy in basal area, with a faint greenish sheen, fringe of both wings creamy buff.—Forewing: outer margin concave, apex rounded, though produced; a discal series of small pale blue spots, the series straight from $SC^{4,5}$ to SM^2 , spot $SC^{4,5}-R^1$ about 2 mm. long, 5 mm. from cell, spot R^2-R^3 absent, spots R^2-SM^2 transverse, about 1 to $1\frac{1}{2}$ mm. thick, widely separated from one another, spot M^2-SM^2 7 mm. from outer margin, spot behind SM^2 more proximal, elongate; a rounded postdiscal dot SC^5-R^1 11 mm. from outer margin, pale blue.—Hindwing: an almost straight series of postdiscal spots, upper one transverse, about $1\frac{1}{2}$ mm. thick, 4 mm. from end of C, spots SC^2-R^2 more rounded, a little larger, spots R^3-SM^2 transverse, 1 to $1\frac{1}{3}$ mm. thick; a submarginal series of small, white, submarginal dots, edged with blue; a series of transverse admarginal pale blue spots, the spots separated, sometimes obsolete.

Underside olive mummy brown, a darker brown line from apex of forewing to anal angle of hindwing, crossing SM^2 of forewing 6 mm. from end, M^1 of hindwing 4 mm. from its base, slightly curved on either wing, bordering the outer marginal area which is wood brown; bars and their white borders extremely thin, sometimes just traceable.—Forewing: no cell-bars 1 and 2, bar 3 separated into two minute dots as in *mycerina*, bar 4 transverse, nearly straight, nearly parallel to cross veins; submedian bars M^1-SM^2 continuous with cell-bar 4; median bars more or less concave distally, continuous, the line beginning $2\frac{1}{2}$ mm. from base of $SC^{4,5}$, bar M^2-SM^2 concave or biconcave distally; a wood brown patch at proximal side of submedian bar M^2-SM^2 , and another at the distal side of median bar M^2-SM^2 , both very conspicuous; marginal area with vestiges of a submarginal and a postdiscal olivaceous band.—Hindwing: submedian and median bars similar to those of *mycerina*, but thinner; outer area with a postdiscal olivaceous mummy brown band which gradually fades away distally; white submarginal dots small but all marked, the posterior ones with small black dots at outer side; edge of wing slightly dentate, anal angle produced, rather acute, no tail.

♀. Unknown.

Length of forewing: ♂, 39 mm.

Hab. Recorded from Cameroons, Angola and (?) Ashanti; in the Tring Museum 3 ♂♂, one without locality, another from Carnotville, the third from between Kumassi to Kintampo, iv. '99 (Col. Northcott). Rare in collections.

c^8 . Forewing above with a series of spots close to outer margin.

82. *Charaxes laodice*.

♀. *Papilio Nymphalis Phaleratus laodice* Drury, *Illustr. Exot. Ins.* III. p. 34 and index. t. 26. f. 1. 2. ♀ (1782) (S. Leone).

- ♀. *Papilio Nymphalis lycurgus* Fabricius, *Ent. Syst.* III. 1. p. 67. n. 209 (1793) (Africa).
 ♀. *Nymphalis lycurgus* Godart, *Enc. Meth.* IX. p. 364. n. 49 (1823) (S. Leone).
 ♀. *Philognoma laodice*, Doubleday, Westw. & Hew., *Gen. Diurn. Lep.* II. p. 311. n. 3 (1850); Butl., *Cat. Diurn. Lep. descr. by Fabr.* p. 49. n. 1 (1869); Plötz, *St. E. Zeit.* p. 194. n. 109 (1880) (Camerouns).
 ♂. *Nymphalis nesiope* Hewitson, *Exot. Butt. I. Nymphalis* t. I. f. 5. 6 (1854) (S. Leone); Kirby, *Cat. Diurn. Lep.* p. 270. n. 31 (1871).
 ♂. *Charaxes nesiope*, Butler, *Proc. Zool. Soc. Lond.* p. 639. n. 66 (1865); Druce, *ibid.* p. 413. n. 9. (1875) (Angola); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 371 (1889) (N. Angola, X. II.); Capronn., *C. R. Soc. Ent. Belg.* XXXIII. p. 126. n. 73 (1889) (Congo); Auriv., *Ent. Tidskr.* XII. p. 216. n. 144 (1891) (Camerouns).
 ♂ ♀. *Charaxes laodice*, Aurivillius, *l.c.* XV. p. 312. n. 201 (1894) (Camerouns; *nesiope* = ♂ of *laodice*); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 373. n. 65 (1896) (O. Calabar; Fernando Po; Camerouns; Angola; L. Tanganyika); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 72 (1899) (Ashanti; O. Calabar; Camerouns; Gaboon; Congo; Angola; Tanganyika).
 ♀. *Palla laodice*, Kirby, *Cat. Diurn. Lep.* p. 274. n. 4 (1871) (S. Leone).

♂ ♀. Body as in *Ch. mycerina*, breast deep burnt umber colour, antennae chestnut.

♂. *Wings above* blue black, with pale azure blue markings, which assume a purplish tint in side-light.—Forewing: two discal spots SC^6-R^2 , 5 mm. from cell, the second sometimes vestigial; a postdiscal series of spots from SC^5 to internal margin, parallel to outer margin, only $2\frac{1}{2}$ to 3 mm. distant from it, spots R^1-R^3 minute, often absent, spot M^2-SM^2 the largest, transverse, diameters 2 and $3\frac{1}{2}$ mm.—Hindwing: a postdiscal series of spots, forming a more or less interrupted, almost straight band, widest in middle, 2 to 3 mm., spot $C-SC^5$ very small or absent, posterior spots (or all) slightly concave distally, spot R^2-R^3 4 mm. distant from outer margin; a series of extremely small bluish white submarginal dots, often partly absent; admarginal spots transverse, separated at veins, upper one or two, seldom also anal one, absent; abdominal fold brownish black.

Underside varying from walnut to burnt umber brown; glossy grey, especially a median, a discal and a postdiscal band on forewing, and the whole hindwing except a band in postdisco-submarginal area.—Forewing: submedian and median lines of bars nearly as in *Ch. doubledayi*, white edging rather prominent, median bar M^2-SM^2 more or less concave distally, cell-bar 4 oblique, nearly touching upper angle of cell, submedian bar M^2-SM^2 at proximal and median bar M^2-SM^2 at distal side with a cinnamon patch; discal bar indicated by brown transverse spots or lunules, which form an indistinct line anteriorly curving towards outer margin; ending at SC^5 , proximally bordered by glossy white scaling, which is condensed before SC^5 to a rather large, conspicuous, admarginal patch; within the postdisco-marginal, not glossy, area, there is a postdiscal and a submarginal series of ill-defined, cinnamon, interstitial spot; apex of wing produced as in *Ch. doubledayi*, outer margin angled at M^2 .—Hindwing: submedian line of bars more or less broken at veins, strongly concave proximally taken as a whole; median line of bars about parallel to the submedian one from C to R^3 , costal bar more distal than the concave bar $C-SC^2$ in most specimens; a discal line, continuous, brown, slightly concave distally, beginning $2\frac{2}{3}$ mm. from end of C, crossing R^3 $3\frac{1}{2}$ mm. from base of M^1 , and ending at abdominal margin near anal angle, externally bordered by a cinnamon line upon which follows a brown postdiscal band which fades away distally; a series of minute, white, submarginal dots; an admarginal cinnamon rufous line, more or less widely interrupted at the veins; a short tooth at R^3 , outer margin rather more distinctly concave between veins, anal angle produced as in *zolica*.

♀. *Wings above* purplish blue brown, outer margin burnt umber colour; markings somewhat paler than in ♂.—*Forewing*: apex more strongly produced than in ♂, angled at SC⁵; two discal spots SC⁵—R²; postdiscal spots smaller than in ♂, spots R¹—R³, or SC⁵—R³ absent, last spot very small or absent, spots M¹—SM² transverse, more or less concave distally.—*Hindwing*: postdiscal band narrower than in ♂, slightly concave proximally, the spots composing it all isolated, transverse, more or less halfmoon-shaped, submarginal dots white, rather more prominent than in ♂, but the series not always complete; admarginal spots absent or partly vestigial.

Underside, paler than in ♂, more russet brown; tail R³ 5 mm. long, dilated at apex, truncated or rounded.

Length of forewing; ♂, 32—38 mm.

“ “ ♀, 40—43 mm.

Hab. West Africa from the Gold Coast to Angola, the Upper Congo and the Tanganyika. In the Tring Museum 16 ♂♂, 2 ♀♀ from: Accra and Mamfé, Gold Coast; Begoro, Ashanti; Warri, Niger Coast Protectorate, vi. '96 (Dr. Roth); Sobo country, Lower Niger, iv. '95 (Dr. Roth); Ogowé R.; Bopoto, Upper Congo; Lukolelo, Congo; Kassai; Kitima in the great forest of the Upper Congo, twenty-one days' march from Fort Beni, Congo Free State, 25. v. '99 (Dr. Ansorge).

p⁵. Markings of upperside not blue.

s⁶. Cell-bar 4 of forewing below distal of point of origin of M¹.

83. *Charaxes nichetes*.

Charaxes nichetes Smith, *Ent. Mo. Mag.* XX. p. 58. (1883) (♂, ♀, Cameroons); Auriv., *Kougl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 69 (1899).

♂♀. *Body above* orange to dark tawny, often with a purplish sheen, tips of palpi black; *underside* ochraceous buff to pale tawny hazel.

♂. *Wings above* orange ochraceous rufous, varying in the depth of the tint with a beautiful reddish purple sheen in side-light.—*Forewing*: outer margin deeply concave, apex therefore much produced, most distal point between veins SC⁴ and SC⁵; cell-bar 3 represented by a brown spot; bar D widened in costal half; median bars R³—M² as rounded spots or patches, median bar M² (SM¹) often absent, bars SC⁶—R² about 5 to 7 mm. from cell, as spots or small patches; discal bars enlarged forming a purplish black band which is externally concave between the veins, often produced distad at veins to join the brown or deep tawny marginal band, the proximal edge of which is often marked by blackish bars, width of discal band very variable.—*Hindwing*: anal angle produced, outer margin rounded, slightly scalloped, no tails; a purplish black discal band of variable width stopping at abdominal fold, widest in middle, almost parallel to outer margin, crossing R³ just proximal of bent of this vein, distally dentate upon R¹; postdiscal and submarginal merged together to rings.

Underside tawny hazel, with a slight reddish purple gloss, bars dark cinnamon rufous, not prominent.—*Forewing*: cell-bar 1 absent, bar 2 abbreviated in front, bar 3 abbreviated behind, sometimes composed of a larger anterior and a tiny posterior spot, 4 mostly arched, seldom straight, situated near end of cell, touching (or almost so) bar D at ends; subbasal bar M² (SM¹) indicated by a dot proximally of base of M²; submedian bars R³—SM² concave distally, the

respective median bars concave proximally, the two bars often joined together to rings; no median bar R^2-R^3 , median bars SC^4-R^1 oblique, straight or distally convex; discal bars SC^4-R^1 proximally concave, about 8 mm. from cell; a thin, purplish black, or deep tawny, mostly continuous, line beginning at costal margin 6 mm. from apex to internal margin, crossing SM^2 about 10 mm. from end; area between this line and outer margin with a whitish gloss except a line of postdiscal, triangular, spots; a white submarginal spot SC^4-SC^5 .—Hindwing: basal and subbasal bars indistinct or absent; costal submedian and median bars absent; submedian line of bars generally reaching SM^2 , the bars widely separated from one another, bar $M^2-(SM^1)$ just distal of base of M^2 , or exactly at the point of origin of this vein; median line of bars also widely interrupted at the veins, bar R^1-R^2 close to origin of R^2 ; a straight discal line, posteriorly approaching anal angle, crossing R^3 about 2 mm. from base of M^1 ; abdominal area and area between that line and margin glossy grey, except a series of postdiscal tawny spots, of which the upper ones are triangular pointing distad, the posterior ones luniform, being distally concave, an admarginal and a marginal line also excepted.

♀ Like ♂, ground colour less bright, black markings of *upperside* more extended; hindwing less produced at anal angle, tooth R^3 and M^2 a little longer than the others.

Length of forewing: ♂, 35—37 mm.

” ” ♀, 41 mm.

Clasper produced into a simple, strong, hook; the ridge which runs from the tip of the hook to the inner surface of the clasper is rather high and ends somewhat abruptly; tenth tergite divided into two sharply pointed processes; penis thin, with very minute teeth forming an irregular, oblique series beginning about 3 mm. from the end; penis-funnel short, triangular, apex compressed, rather strongly chitinised, turned down to a sharp hook.

Hab. Cameroons to Angola, Nyassaland; two subspecies.

The differences between the two forms *leoninus* and *nichetes* do not justify a specific separation, nor are they constant, certain Angola individuals standing intermediate in character between typical *nichetes* and typical *leoninus*.

a. *Ch. nichetes leoninus.*

Charaxes leoninus Butler, *Proc. Zool. Soc.* p. 253. n. 12. t. 15. f. 2. ♂ (1895) (Zomba); id., *l.c.* p. 720. n. 13 (1895) (Zomba); id., *Journ. Linn. Soc. Lond.* XXV. p. 372. n. 59 (1896) (Zomba); id., *Proc. Zool. Soc. Lond.* p. 823. n. 14 (1896) (Lower Nyika, VI.).

Charaxes nichetes var. *leoninus*, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. sub n. 69 (1899) (Zomba).

♂. *Body above* and wings orange ochraceous rufous; discal reddish purple, black band of wings narrow, that of forewing not extended to rounded median bars, that of hindwing mostly narrower than the interspace between itself and the thin bar D, from which it is separated, width 2 to $3\frac{1}{2}$ mm. at R^1 .

Underside: discal line across both wings continuous, purplish black.

♀. Paler, larger, discal band of *upperside* rather broader.

Hab. Nyassaland. In the Tring Museum 2 ♂, 2 ♀ from: Zomba, December 1895 (Dr. Percy Rendall); Ch'hipaika Estate, Bandawe (F. Watkinson).

The individuals from Angola belong to the following subspecies, but are partly intermediate.

b. *Ch. nichetes nichetes*.

- Charaxes nichetes* Smith, *Ent. Mo. Mag.* XX. p. 58 (1883) (♂, ♀, Cameroons); id. & Kirby, *Rhop. Exot. I.* *Charaxes* t. 4. f. 1. 2. 3. ♂, ♀ (1890); Weym., *Stett. Ent. Zeit.* p. 120. n. 11 (1892) (*ogovensis* = *hamatus* = *nichetes*); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 372. n. 60 (1896) (Cameroons); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 244. n. 69 (1899) (pt.; Cameroons; Ogowé R.; Kassai).
- ♂. *Charaxes hamatus* Dewitz, *Ent. Nachr.* X. p. 285. fig. (1884) (N. Angola); id., *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 372 (1887) (N. Angola, XII.).
- ♂. *Charaxes ogovensis* Holland, *Trans. Amer. Ent. Soc.* XIII. p. 330. t. 8. f. 2 (1886) (Ogowé R.).

♂. Darker than *leoninus*, the red purple gloss stronger; discal band of *upperside* considerably wider, on forewing touching the round median spots or even extending further basad, on hindwing twice the width of the band of *leoninus*, cell and area behind cell shaded with purplish brown.

Underside, discal line less continuous and less black than in *leoninus*.

♀. *Upperside* of wings more shaded with black than in ♂, black discal band broader.

Hab. Cameroons; Ogowé R.; Congo; Kassai; Angola. In the Tring Museum 6 ♂♂ from: "West Africa"; Congo: Leopoldville, Bumba, Congo, 10. vi. '99 (Dr. Ansonge); Bolombo R., Angola, 28. iv. '99 (Penrice).

ℓ⁶. Cell-bar 4 of forewing below proximal of point of origin of M¹.

q⁷. Underside with a continuous line across both wings.

r⁸. Forewing falcate, line across forewing below gently curved, bars in outer half of hindwing below indistinct.

84. *Charaxes paphianus* (Nov. Zool. VI. t. 8. f. 1. ♀).

- Charaxes paphianus* Ward, *Ent. Mo. Mag.* VIII. p. 120 (1871) (Cameroons); Auriv., *Ent. Tidskr.* XV. p. 311. n. 198 (1894) (Cameroons, VI. X. XI.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 402. n. 154 (1896) (S. Leone; Cameroons; Angola); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 242. n. 62 (1899) (S. Leone; Ashanti; Togo; O. Calabar; Cameroons; Ogowé; Quango; Mukenge; Aruwimi; Angola).
- Philognoma falcata* Butler, *Lep. Ex.* p. 101. t. 38. f. 1. ♂ (1872) (Gold Coast; Ashanti); Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 91 (1890) (Aruwimi).
- Palla falcata*, Kirby, *Cat. Diurn. Lep.* p. 749. n. 6 (1877) (Afr. occ.); Staud., *Exot. Tagf.* p. 174. (1886) (Angola); Dewitz, *Nov. Act. Leop. Car. Ak. Naturf.* L. 4. p. 372 (1887) (Angola, Jan.).
- ♀. *Palla hamulosa* Weymer, *Stett. Ent. Zeit.* LIII. p. 94 (1892) (Gold Coast).
- Charaxes falcata*, Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 58 (1893) (Togo); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 402. n. 153 (1896) (Ashanti; O. Calabar).

♂ ♀. Body as in *Ch. lichas*, but *below* much deeper brown.

♂. *Wings, upperside*, yellowish tawny orange, paler than in *Ch. lichas*, with a reddish purple gloss in side-light.—Forewing: outer margin concave from SC⁴ to M², apex produced; cell-bars 3 and 4 generally vestigial behind SC, bar D³ thin; median bars R³—M² seldom traceable, but shining through from below, median bar R²—R³ $\frac{1}{3}$ to 1 mm. from cell, sometimes merged together with bar D³, median bars SC⁵—R² represented by two patches which are rounded distally, occasionally produced basad to cell; three discal spots SC⁵—R¹, the upper one large, generally completely merged together with the black apical area; a black marginal band narrowing behind, mostly not extending to hinder angle of wing, dilated basad from R¹ or SC⁵, the black scaling seldom reaching to apex of cell or further down SC; three postdiscal spots R²—M¹ either small and isolated, or

partly or totally merged together with the marginal band, in which case the latter appears dilated between the veins.—Hindwing: median bars C—R¹ more or less vestigial, discal bar C—SC² also visible; postdiscal bars generally very feebly marked, often absent, except bar C—SC², which is mostly present; the bars concave distally, seldom joined at ends to the submarginal ones, which are concave proximally; the lower submarginal bars generally very short and feeble, sometimes obsolete, the upper ones a little heavier at internervular folds, bar C—SC² heavy, extended to margin of wing, mostly merged together with the postdiscal bar at the veins; admarginal line vestigial, especially between SC² and R³; abdominal fold yellowish buff.

Underside burnt umber brown, faintly ochreous here and there in submedian and discal interspaces; glossy, except in submarginal region of forewing posteriorly and in marginal region of hindwing; median interspaces of both wings slightly deeper in tint, band-like; bars thin, subbasal to median ones thinly edged white; a line beginning at costal margin of forewing near apex, crossing M² 7 mm. from its base, C of hindwing 7 mm. from its tip, M a little proximally of, or at, base of M¹, and ending at abdominal margin 3 mm. from end of SM², the line is dark mummy or walnut brown, gently curved on forewing, straight on hindwing, with a rather indistinct, thin, greyish proximal border.—Forewing: basal third or fourth of costal margin white; no basal cell-spot, cell-bar 2 concave proximally, bar 3 represented by two dots of about equal size, bar 4 very slightly oblique, a little distal of base of M², in most specimens distinctly angled in middle, the angle pointing distad; bar D³ very thin; submedian bar M²—(SM¹) just before base of M², not continuous with cell-bar 4; median bars M²—SM² concave distally, bars R³—M² much less so, mostly straight, much more proximal than in *Ch. lichas*, bar R³—M¹ continuous with bar R²—R³, or a little more proximal, median bars SC²—R² forming a proximally concave line which is, at R², 6 mm. distant from cell; two oblique discal bars SC⁴—R¹, the second mostly obsolete, the first also occasionally absent, both pointing distad with hinder end, the one appearing as continuation of the other; postdiscal bars triangular, tip of angles pointing distad, but mostly the tip alone clearly marked as a black dot; glossy grey scaling near margin rather more obvious than on disc.—Hindwing: costal basal and subbasal bars absent, subbasal bar C—SC² also not marked; cell-bar 2 concave proximally; submedian and median bars forming two regularly curved, parallel, lines which are not, or slightly, broken at the veins, the median line either touching in middle the straight, discal, band-like line, or up to 2 mm. distant from it; postdiscal bars very faint, concave distally; submarginal bars also feebly marked concave proximally, bordered distally with white lines or dots, both the postdiscal and submarginal series parallel to outer margin, much less broken at R² than in *lichas*; admarginal line obsolete; outer margin of wing more triangular than in *Ch. lichas*, tail longer.

♀. *Wings above* yellow ochraceous, more tawny ochraceous distally and at base.—Forewing: median bars R²—M² close to cell, bars SC⁵—R² as heavy as in ♂, discal bars SC⁶—M¹ present, sometimes also bar SC⁴—SC⁶ isolated, bars R²—M¹ more proximal than the upper ones; a complete postdiscal series of patches, upper three more distal than the four others, size variable; admarginal band also variable in width, the markings at apex of wing more or less merged together (as in figure), or more or less isolated.—Hindwing: median bars C—R² more or less vestigial, as is bar D; discal line well marked down to R¹, then vestigial; postdiscal

spots concave distally, larger than in ♂, submarginal bars also heavy in most examples.

Underside much paler than in ♂, pinkish buff, shaded with clay colour, markings as in ♂, veins more obviously green.

Length of forewing : ♂, 27—32 mm.

” ” ♀, 33 mm.

Clasper similar to that of *Ch. lichas*, but the tooth before the apex is more dorsal, appearing as process of the dorsal edge of the clasper ; penis-funnel shorter than in *lichas*, more suddenly narrowed, apical rod-like portion thinner ; penis with the teeth more dispersed.

Hab. West Africa from Sierra Leone to Angola and the Upper Congo and Aruwimi Rivers. In the Tring Museum 12 ♂♂ from : S. Leone ; Kumassi to Cape Coast Castle, iv. '99 (Capt. Giffard) ; Lukolele, Congo ; Sakarumbi, one day's march from Ft. Beni, Congo Free State, 5. v. '99 (Dr. Ansonge).

l^s. Forewing not falcate, line across underside of forewing not curved, bars in outer half of hindwing below distinct.

85. *Charaxes lichas*.

♂. *Philognoma lichas* Doubleday, in Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. t. 49. f. 3. ♂ (1850).

♂♀. Head, pro- and mesonotum olive tawny, the last in ♀ more olive buff, metanotum and abdomen tawny (♂) or ochraceous (♀), palpi and antennae brown, four white dots on head, and a short line behind eye white, occasionally a double dot before antennae ; *underside* buff in ♂, creamy buff in ♀.

♂. *Wings, upperside*, tawny orange, with a strong reddish purplish sheen in side-light.—Forewing : in the darkest specimens apical half black, this area reaching cross-veins and extending basad at costal margin, often entering upper angle of cell, at M¹ the area is suddenly narrowed to a marginal band of 3 to 4 mm breadth, which reaches down to internal margin, the edge of the margin remaining generally tawny orange ; the area includes in many specimens some tawny orange spots, namely, a discal interstitial spot R²—R³ close to cell, often completely merged together with the basal area, two discal spots SC⁵—R² about 6 to 7 mm. from cell, a discal spot R³—M¹ 4 mm. from base of M¹, two postdiscal spots R¹—R³ 4 mm. from outer margin, and two postdiscal spots M¹—SM², the latter subdivided, all these spots or some of them often absent ; occasionally there is a submarginal spot M²—SM² present, in which case the admarginal, submarginal and postdiscal bars M²—SM² are recognisable ; median bars R³—M² often vestigial ; in the palest specimens the discal and upper postdiscal tawny spots are merged together with the basal area, in which case the black area is much reduced ; outer margin concave between R² and SM².—Hindwing : postdiscal and submarginal bars thin, black, the postdiscal ones curved distad at ends, joining the submarginal ones, which are straight or very slightly curved, thus forming more or less halfmoon-shaped rings, ring-spot R²—R³ small, posterior postdiscal bars often, the submarginal ones seldom, obsolete ; a thin but mostly very distinct admarginal line black, interrupted at veins R²—SM², posterior bars sometimes obsolete ; admarginal interspace C—SC² often black, this black scaling not seldom extending basad to the vestige of discal bar C—SC² ; median bar C—SC² sometimes vestigial, as is in some specimens also

median bar SC^2-R^1 ; basal half or two-thirds of abdominal fold orange buff, paler towards base.

Underside ochraceous; median, and greater part of discal, interspaces of both wings and postdisco-marginal area of forewing down to M^2 densely shaded with brown scaling which varies from burnt umber colour to cinnamon rufous, the other interspaces also partly shaded with such scaling, but cell of forewing up to bar 4, basi-submedian interspace $M-SM^2$, a spot at outside of each median bar of the same wing, and the submedian and postdiscal interspaces of hindwing more or less pure ochraceous, sometimes whitish, especially the discal spots and submedian interspace of cell of hindwing; the latter wing often also with conspicuous creamy white spots at outside of median bars, spot R^2-R^3 almost silvery white in some specimens; bars black, or tawny, without white edges.—Forewing: costal margin white or ochraceous at base, with a black dot 11 mm. from base, a second black mark in front of cross-veins; no basal cell-spot, cell-bar 2 convex distally, bar 3 separated into a number of dots, bar 4 straight, obliquely placed, hooked at extreme upper end, continuous with submedian bars M^2-SM^2 , the line crossing M exactly at point of origin of M^2 , cell-folds brown apically; median bars SC^3-R^2 continuous, forming a nearly straight line 5 mm. from apex of cell, median bars R^2-SM^2 deeply concave distally, bar R^2-R^3 $\frac{1}{2}$ to 2 mm. from cell, bar R^3-M^1 more distal than bars M^1-SM^2 , which are continuous or nearly so; a straight or slightly curved brownish black line from costal to internal margin, $4\frac{1}{2}$ mm. from outer margin at SC^4 , 10 mm. at SM^2 , partition SC^3-SC^4 pointing obliquely basad, part SC^3-R^1 represents apparently the postdiscal bars, while the rest is homologous to the discal bars, at proximal side of line there is glossy white scaling in costal region; discal bars SC^4-R^1 concave distally, bar SC^3-R^3 touching at R^1 the postdisco-discal line, the two bars, taken as a whole, at right angles to costal margin; postdiscal series of thin bars very irregular, the bars arrowhead-shaped, pointing distad upon internervular folds, bar R^3-M^1 generally less obvious than the others, often not visible, the cellule being scaled brown; a submarginal series of rather obscure, distally convex bars, bar at internal margin more proximal; upper admarginal interspaces more or less white.—Hindwing: basal costal bar curving distad, often reaching end of PC ; no costal subbasal bar, subbasal bar $C-SC^2$ also often absent; submedian bars more or less concave proximally, upper ones straight in specimens with darker *underside*, the series crossing M just at point of origin of R^1 , bar $M^1-(SM^1)$ nearer base of M^2 , 1 to 2 mm. distant from cell-bar 4, submedian bars $(SM^1)-SM^3$ absent, but a bar behind SM^3 , curving basad; median bars continuous (or almost so) from costal margin to R^1 or R^2 , the line oblique, parallel to submedian line of bars, reaching R^2 2 mm. from bar D , continuous with the submedian line of the forewing, bars $R^2-(SM^1)$ concave distally, bars $(SM^1)-SM^3$ continuous, reaching SM^3 3 to 4 mm. before its end; discal bars fused together to a distally sharply defined, brownish black, straight line, which is the continuation of the line of forewing, crossing C 9 mm. from end, M at point of origin of M^1 , and ending at abdominal margin near anal angle, discal interspace as on forewing glossy, median bar R^3-M^1 outside that line (or is this bar a discal one, median bar R^3-M^1 being part of the line?); postdiscal bars angulated at internervular folds, the angles pointing basad, bar R^2-R^3 more evenly concave, bars $C-R^2$ more proximal than the others, the series nearly parallel to outer margin, anteriorly and posteriorly approaching the discal line very closely; submarginal bars transverse, about 2 mm. from edge of wing, not abbreviated,

upper three somewhat concave distally, the others straight, continuous, the series suddenly 2 or 3 mm. more distal behind R^2 , last one or two partly bordered white distally; admarginal line dark tawny, bordered white at anal angle; fringe with some white scales midway between veins; outer edge of wing, taken as a whole, triangular, produced into a blunt triangular tail at R^3 , and into a blunt tooth at M^2 , anal angle rounded, not produced.

♀ *Wings above* yellow buff, a little more ochraceous towards base.—Forewing: bar D^3 thin, brown, median bars more or less vestigial, sometimes blackish, in the same position as below; discal line either shining through from below, or slightly marked by brown scales; postdiscal bars M^1 — SM^2 brown, biconcave distally if well marked; submarginal bars concave proximally, interspace between them and edge of wing dark brown, or tawny, this colour mostly extending to vestiges of discal bars SC^4 — R^1 ; outer edge of wing slightly convex.—Hindwing: postdiscal and submarginal bars wider apart than in ♂, therefore the rings formed by them larger, centres of wings assuming sometimes a creamy tint, posterior submarginal bars often obviously bordered white distally.

Underside almost uniformly buff or creamy buff, very much less particoloured than in ♂, the creamy buff specimens have outside the discal line two brown patches on forewing, one between R^3 and M^1 , the other at internal margin, and one patch in centre of hindwing; tail broader than in ♂.

Length of forewing: ♂, 29—31 mm.

” ” ♀, 33—35 mm.

Clasper produced into a slender, long, gently curved apical hook, which is not scaled and bears on the outside a tooth which points distad; tenth tergite rounded, slightly sinuate mesially; penis thin, a patch of teeth about $1\frac{1}{2}$ mm. before end dorsally on the left side, one dorsal tooth just before end.

Neuration: D^3 of hindwing reaching M in both sexes about midway between M^1 and M^2 .

Hab. West Africa from S. Leone to Angola, the Upper Congo and German East Africa.

a. *Ch. lichas lichas.*

Philognoma lichas Donbleday, in Doubl., Westw. & Hew., *Gen. Diurn. Lep.* 11. t. 49. f. 3. ♂ (1850) (*hab.?*); Lucas, in Chenu, *Enc. d'Hist. Nat., Pap.* p. 154. f. 299 (1852) (Ashanti).

Pallu lichas, Mabilie, *Bull. Soc. Zool. Fr.* I. p. 281 (1876) (Congo); Dewitz, *Nov. Act. Leop. Cur. Ak. Naturf. L.* 4. p. 372 (1887) (Mukenge, I. II. IV.); Weym., *Stett. Ent. Zeit.* LIII. p. 93. n. 10. ♀ (1892) (Gold Coast); Schaus & Clements, *Sierra Leone Lepid.* p. 9 (1893).

Charaxes lichas, Butler, *Journ. Linn. Soc. Lond.* XXV. p. 401. n. 152 (1896) (S. Leone; Ashanti; Accra; O. Calabar; Cameroons; Angola); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 242. n. 61 (1899) (S. Leone to Angola).

♂. *Wings above*.—Forewing: black area extended to cell, sometimes the tawny postdiscal spots R^1 — R^3 joined to the tawny basi-discal area, but in this case the veins R^1 — R^3 black, except immediately at cell; no tawny submarginal spots between R^2 and M^1 .

♀. As described above.

Hab. Sierra Leone to Angola and the Lower Congo. In the Tring Museum 28 ♂♂, 5 ♀♀ from: Sierra Leone, 21. vii. '88; Ashanti; Acera; R. Ogowé; Lukolele, Congo.

One of the two Ogowé examples in the Tring Museum leads over to the next form.

b. Ch. lichas bebra Rothsch., subsp. nov.

♂. *Wings above*.—Forewing: black colour reduced; discal tawny patches SC^4 — R^3 completely fused together with the tawny area, the black marginal area only 3 to 4 mm. wide between R^1 and R^2 , tawny postdiscal interspaces R^2 — M^1 marked, or at least interspace R^3 — M^1 , hence the black postdiscal patch R^2 — M^1 not completely merged together with the black wing border.

♀. Unknown.

Hab. Great Forest of the Upper Congo: Diapanda, six days' march from Ft. Beni (*type*), 10. v. '99; and on the 7th, 10th, and 11th day during the march from Ft. Beni to the Ituri R., the 11th, 14th, and 15th of May 1899 (Dr. Ansorge); 5 ♂♂. A ♂ in Dr. Standinger's collection from the Pangani steppe, German East Africa (R. v. Benningsen).

♂⁷. Underside of wings without a continuous line across discs.

86. *Charaxes jahluca*.

Nymphalis jahluca Trimen, *Rhop. Afr. Austr.* p. 177. n. 102. and p. 341. t. 3. f. 5 (1862) (interior of S. Afr.).

♂♀. *Body above* tawny ochraceous, mesonotum somewhat olivaceous; head with a buff spot between the antennae, the usual four white dots, and a smaller dot at each side near eye close to the posterior spots, palpi black above, antennae black, tip tawny; *underside* white, creamy white or buff, anterior tibia, stripes on sterna underneath legs, and part of the hairs on metasternum blackish brown; abdomen with two series of brownish black patches which are generally merged together to a double streak which is broadest in ♂, the patches in ♀ often small.

♂. *Wings above* buffish orange, with black markings.—Forewing: cell-bar 3 represented by a dot, bar 4 well marked, somewhat S-shaped, being concave distally in upper half and proximally in lower half, sometimes interrupted, transverse, upper end not closer to cross-veins than lower end; bar D heavy; submedian bars M^1 —(SM^1) a little distal of bases of veins M^1 and M^2 respectively, the second rounded, the first mostly linear; median bars SC^4 — SC^5 , 5 mm. from cell, bar R^2 — R^3 close to cell, often merged together with bar D, bar R^3 — M^1 4 to 5 mm. from base of M^1 , slightly inclining basad, bar M^1 — M^2 a little more proximal, bar M^2 —(SM^1) rounded, again a little more proximal, seldom followed by a short, small, bar (SM^1)— SM^2 ; discal bars SC^4 — R^2 triangular, patch-like, concave distally, more or less obviously joined along veins to postdiscal bars, discal bars R^2 — M^2 gradually less distinct, bars R^3 — M^2 often scarcely traceable; postdiscal bars halfmoon-shaped, contiguous, all produced along veins to outer margin, separating buffish orange admarginal spots from the discal area, posterior admarginal spots halfmoon-shaped, upper ones elongate triangular, spot SC^4 — SC^5 often wanting; a thin black marginal line; fringe white between veins; outer margin deeply concave in middle.—Hindwing: a series of short median bars, bars C — R^1 almost continuous, or bar SC^2 — R^1 more proximal, bars R^1 — R^3 close together, in front of point of origin of M^1 , bar R^3 — M^2 sometimes vestigial, never clearly marked, in many specimens the median bars obsolete; one discal bar C — SC^2 , often merged together with the median bar C — SC^2 , a spot in cell and larger spots at outer side

of bars paler orange; postdiscal bars heavy, halfmoon-shaped, continuous, joined along veins to the thin, transverse, submarginal bars, isolating transverse, linear or ovate, pale orange spots, upper ones of these spots often absent; admarginal black line continuous; admarginal pale orange interspaces continuous, very seldom interrupted between M^1 and M^2 , shaded with olive buff at anal angle; fringe white between veins.

Underside, discal interspace SC^3-R^3 proximally, postdiscal interstitial spots SC^3-R^1 of forewing, submedian interspace $C-SC^2$, a spot in cell, abdominal area, proximal part of discal interspaces, and some postdiscal and submarginal spots of hindwing silvery white, apical half of forewing and submarginal area of hindwing more or less shaded over with silvery grey; veins green.—Forewing: pale rufous, apex down to R^3 olive or cinnamon, bars short but heavy; no basal cell-spot, cell-bar 2 mostly abbreviated anteriorly with a black spot in front before C , bar 3 abbreviated posteriorly, mostly reduced to a dot at SC which is often followed by a smaller dot, cell-bar 4 and bar D as above; submedian bars heavier than above; median ones rather thinner, bars SC^3-R^1 much smaller than bars R^3-M^2 ; a discal series of thin bars from SC^3-SM^2 , posterior ones vestigial, bar R^1-R^2 more distal than the others, generally with a rufous spot at outside, while bars R^2-M^1 are more or less obviously bordered white; the series followed by postdiscal bars of which bars M^1-SM^2 are heavy, transverse, while the others are vestigial; admarginal rufous interspaces isolated, upper ones minute.—Hindwing: olive to cinnamon; basal, submedian and median costal bar short, dot-like, basal one widely separated from PC ; subbasal bar $C-SC^2$ a dot; cell-bars 2 and 4 joined together, their hinder portions forming a ring which is filled up with silvery white, middle fold of cell black, this line connecting all the bars; submedian bar $C-SC^2$ concave proximally, about 3 mm. from base of R^1 , subbasal and submedian bars M^2-SM^2 generally merged together to two rings with white centres, no subbasal and submedian bars SM^2-SM^3 , but two separate bars often present behind SM^3 ; median bar SC^2-R^1 much more proximal than the median bars before and behind it, bar R^3-M^1 more distal than bar R^2-R^3 , bar $M^2-(SM^1)$ 2 to 3 mm. distant from bar M^1-M^2 , bars $(SM^1)-SM^3$ reaching SM^3 near, or at, its end; discal, postdiscal, submarginal, and admarginal bars rather close together, thin, transverse, postdiscal interspace SC^2-R^1 larger than the others, white, the other postdiscal interspaces rufous ochraceous, but interspace R^3-M^1 often white; submarginal interspaces pinkish white, posterior ones wider than upper ones, submarginal bars mostly bordered white distally, upon these white borders follow the admarginal bars, which, however, are often absent; admarginal interspaces rufous ochraceous; marginal line black, partly glossy grey; internervular folds in distal and abdominal areas deeper in tint than ground of wing; outer margin scalloped, tails thin, triangular, acute, 3 to 4 mm.

♀. Larger than ♂, hindwing much less triangular, apex of forewing less produced. *Wings above* paler, being ochraceous with a slight reddish orange tone; black markings the same, but the submarginal and admarginal interstitial spots rather larger. *Underside* as in ♂, slightly paler, the silvery markings comparatively smaller, the grey scaling reduced; tails slender, somewhat longer than in ♂, upper one less pointed.

Length of forewing: ♂, 23—27 mm.

“ “ ♀, 26—33 mm.

Clasper rather broad at the end, which is so twisted that the inner surface is

almost horizontal, tip pointed but short; tenth tergite short, rounded, with the vestige of a mesial sinus; penis-funnel long, slender, gradually narrowing towards the end, which is almost rod-like and forms a compressed hook the tip of which points somewhat proximad; penis short, swollen about 1 mm. before the end, with a dorsal row of teeth which turns towards the left side proximally.

Hab. East Africa from the Cape Colony to Nyassaland.

a. *Ch. jahlusa jahlusa*.

Nymphalis jahlusa Trimen, *Rhop. Afr. Austr.* p. 177. n. 102. and p. 341 (1862) (interior of S. Afr. : Grahamstown; Bashee R.; non Zambesi); Gooch, *Entom.* XIV. p. 6 (1881) (Natal); Kirby, *Cat. Diurn. Lep.* p. 273. n. 53 (1871) (Afr. mer.); Wallengr., *Öf. Vet. Ak. Förh.* XXXII. 1. (1875) (Transvaal).

Charaxes jahlusa, Butler, *Proc. Zool. Soc. Lond.* p. 637. n. 59 (1865) (pt.; Cap. b. sp.); Trim. & Bowk., *S. Afr. Butt.* I. p. 325. n. 106 (1887) (Cape Col.; Caffraria; non Zambesi); iid., *Lc.* III. p. 407. (1889) (Barborton, V.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 371. n. 57 (1895) (Cap. b. sp.; Natal); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 240. n. 50 (1899) (Cape Col.; Caffraria; Natal; Transvaal).

♂. Abdomen *below* with two black streaks from base to end, more or less merged together in basal half. *Wings above*.—Forewing: cell-bar 4 and submedian bars well marked; discal and postdiscal interspaces mostly obviously paler than disc.—Hindwing: submedian and median bars C—SC² rather heavy and mostly merged together, seldom entirely separate; median bars SC²—M³ more or less marked, seldom absent.

Underside.—Forewing: apical area olivaceous, shaded with white; postdiscal white spots SC⁴—R¹ obvious, the second ovate triangular, 1 to 1½ mm. long; cell-bar 4 and submedian bars nearly 1 mm. broad.—Hindwing: olive, abdominal area white or grey, seldom clayish; white patches in discal interspaces contiguous, patches M²—SM² or M²—SM³ mostly well marked, the patches very often much larger than the olive distal portions of the discal interspaces; postdiscal, interstitial, white spot SC²—R¹ ovate, conspicuous.

♀. Abdomen *below* with two broad black lines which are partly merged together at base.

Wings above.—Forewing: submedian bars about 1 to 1½ mm. broad; black discal triangular patches SC⁴—R¹ well marked, mostly followed by some more patches; discal and postdiscal interspaces SC⁴—R¹ paler than disc.

Underside as in ♂, but white discal patches of hindwing comparatively (often absolutely) smaller; white postdiscal spot SC²—R¹ of hindwing often triangular.

Hab. Cape Colony; Natal; Transvaal. In the Tring Museum 19 ♂♂, 8 ♀♀ from: Grahamstown; Estcourt; found from middle of August to end of September, and in February. In a ♀ from Grahamstown the submedian and median bars M¹—(SM¹) of the upperside of the forewing are merged together to two broad streaks, median bar R³—M¹ is also enlarged to an elongate patch, while cell-bar 4, bar D and median bar R²—R³, and median bars SC³—R² form three more patches. In this individual, as well as in another from Natal, bar M²—(SM¹) of the hindwing is present above.

b. *Ch. jahlusa argynnides*.

Charaxes argynnides Westwood, *Proc. Ent. Soc. Lond.* (2). III. p. 10 (1864) (Zambesi); Butl., *Proc. Zool. Soc. Lond.* p. 457 (1866) (*jahlusa* distinct from *argynnides*!); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 371. n. 58 (1896) (L. Nyassa; Shiré R.; L. Tanganyika; Zambesi).

Charaxes jahluca, Butler, *l.c.* p. 637. n. 59 (1865) (pt. ; Zambesi) ; Trim. & Bowk., *S. Afr. Butt.* I. p. 325. n. 106 (1887) (pt. ; Zambesi) ; iid., *l.c.* III. p. 407 (1889).
Nymphalis jahluca Trimen, *Rhop. Afr. Austr.* p. 341 (1866) (pt. ; Zambesi).
Nymphalis jahluca var. *argynnides*, Kirby, *Cat. Diurn. Lep.* p. 273. sub n. 53 (1871) (Zambesi).
Charaxes jahluca var. *argynnides*, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 240. sub n. 50 (1899) (Zambesi ; Nyassa ; Tanganyika).

♂ ♀. Black spots on *underside* of abdomen small, widely separated, not merged together to lines.

♂. *Wings above*.—Forewing : cell-bar 4 thin, separated into dots, often obliterated ; submedian bars small, sometimes obsolete ; median bars also thinner than in the southern form.—Hindwing : median bars SC²—M² seldom vestigial.

Underside : apical area of forewing, and the hindwing dark tawny olive, of a more tawny tone than in *jahluca jahluca*, both wings less shaded with white, bars obviously thinner, white discal patches of hindwing smaller than in most specimens of *j. jahluca* ; white postdiscal dots SC⁴—R¹ of forewing and SC²—R¹ of hindwing very small, mostly clayish.

♀. Differs from *j. jahluca* like ♂ ; moreover, brown discal patches SC⁴—R¹ of forewing above obsolete ; underside of hindwing olive tawny, apical area of forewing tawny cinnamon.

Hab. Zambesi ; Nyassaland ; Tanganyika. In the Tring Museum 3 ♂♂, 10 ♀♀ from Likoma, Nyassa, caught in March, June, July, August, Sept., Oct. (Rev. Dutton).

The basal costal spot of the hindwing below is absent in some specimens of both sexes, the bars behind SM³ are also occasionally wanting.

♂⁴ Underside green, scaling obliterated, except a few spots.

87. *Charaxes eupale*.

Papilio Plebejus Urbanus eupale Drury, *Illustr. Exot. Ins.* III. p. 7. t. 6. f. 3. and Index (1782) (S. Leone).

Papilio Nymphalis amasia Fabricius, *Ent. Syst.* III. 1. p. 136. n. 419 (1793) ("Surinam" loc. err.!).

♂ ♀. Palpi *above*, head, pronotum and (generally) anterior part of mesonotum pale russet, antennae green, mesonotum clothed with greyish white and oil green hairs, metanotum with long greenish grey ones, abdomen greenish cream colour ; *underside* dirty white, rostrum oil green, legs and palpi, if denuded, also green.

♂. *Wings, upperside*, membrane oil green, basal half (or more) of forewing, and the hindwing scaled greenish white.—Forewing : basal area always extending beyond apex of cell, its outer edge at right angles to costal margin, mostly sinuate between veins ; a short brown bar upon upper cross-veins, often a vestige of a bar upon D³ ; green outer area covered with brownish black scales, which stand generally denser near the outer margin of the wing and at the edge of the greenish white area.—Hindwing : a series of black submarginal spots, variable in size, often with white centres, spot C—SC² minute or absent, spot M¹—M² small ; outer margin brown, this scaling often so extended as to include most of the submarginal spots, sometimes restricted to the very edge of the wing.

Underside green, with sparse white scaling which is here and there condensed to markings, especially to transverse, short, thin lines.—Forewing : cell generally

with a white band, which is outwardly bordered by a thin black line in many specimens, which line represents cell-bar 4, the band transverse, midway between M^1 and M^2 ; a vestige of a bar upon upper cross-veins; a median line of bars, from SC^3-R^2 , 7 mm. from cell, and again from R^2-M^2 or (SM^1), this second portion of the line a little more proximal, the line very often obliterated, often with a band of white scaling at outside in which stands a brown patch between M^1 and M^2 , a smaller one before M^1 , and occasionally a third, small, one behind M^2 ; at the outside of these spots there are often vestiges of black discal bars; a black and white postdiscal dot SC^5-R^1 3 mm. from outer margin, preceded in many specimens by a minute dot SC^4-SC^5 somewhat nearer the margin; seldom there is a third dot before SC^4 ; in few specimens the series is continued to M^2 , dot R^3-M^1 5 mm. from margin.—Hindwing: the white, linear, speckles represent partly the white borders of the bars of other *Charaxes*, a more obvious line in cell is doubtless homologous to the white proximal border of cell-bar 4 of other species; a white, ill-defined, sparsely scaled, band from costal to abdominal margin which includes more or less conspicuously marked brown spots, of which spot R^2-R^3 is apparently always traceable; the band crosses R^3 just at the bent, it is straight, begins 4 to 5 mm. from end of C and ends about 2 mm. from end of SM^2 ; traces of postdiscal, white, interstitial lunules nearly always marked; a series of minute, black, submarginal dots edged with white, dots M^1-M^2 and $C-R^1$ generally obsolete; tail R^3 represented by a very short, broad tooth.

♀. Like ♂, a little larger, outer margin of forewing straighter, outer edge of basal area of forewing taken as a whole less straight.

Length of forewing: ♂, 25—34 mm.

“ “ ♀, 34—36 mm.

Clasper produced apically into a short hook beneath which there stands a long, slender, curved tooth; in a dorsal view the apex of the clasper appears to be bifid; the clasper is in structure intermediate between that of *Ch. etheocles* and that of *lichas*; penis-funnel short, compressed, almost truncate in a side view forming a strong hook; penis thin, without dentition; tenth tergite rounded triangular, not sinuate.

Hab. From Sierra Leone to Angola and Unyoro; Nyassaland; Brit. E. Africa.

a. *Ch. eupale eupale*.

Papilio Plebejus Urbanus eupale Drury, l.c.

Papilio Nymphalis anasia Fabricius, l.c.

Nymphalis anasia, Godart, *Enc. Méth.* IX. p. 389. n. 137 (1823) (Afr. occ.); Lucas, *Lep. Ex.* p. 129. t. 69. f. 3 (1835).

Charaxes eupale, Doubleday, *List Spec. Lep. Ins. Brit. Mus.* I. p. 111 (1844) (Ashanti); Butl., *Proc. Zool. Soc. Lond.* p. 638. n. 64 (1865) (S. Leone; Ashanti); id., *Cat. Diurn. Lep. descr. by Fabr.* p. 50. n. 1 (1869) (Ashanti); Druce, *Proc. Zool. Soc. Lond.* p. 413. n. 10 (1875) (Angola); Staud., *Exot. Tagf.* p. 171. t. 58. ♂ (1886) (Angola: Congo); Dewitz, *Nov. Act. Leop. Car. Ak. Nat. L.* 4. p. 371 (1887) (N. Angola, XII. I.); Capr., *C. R. Soc. Ent. Belg.* XXXIII. p. 126. n. 72 (1889) (Kassai); Godm. & Salv., in Jameson, *Story Rear Column* p. 440. n. 88 (1890) (Aruwimi); Rogenh., in Baumann, *Usambara* p. 327. n. 87 (1891) (N. Usuguru); Auriv., *Ent. Tidskr.* XV. p. 312. n. 204 (1894) (Cameroons, V. VI.); Reb. & Rogenh., in Baumann, *Massailand* p. 332. n. 101 (1894) (N. Urundi); Karsch, *Berl. Ent. Zeitschr.* XXXVIII. p. 192. n. 61 (1894) (Togo); Holl., *Proc. U. St. Nat. Mus.* XVIII. p. 753 (1895) (Brit. E. Afr.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 378. n. 80 (1896) (S. Leone; Ashanti; Accra; Cameroons; Angola); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 245. n. 75 (1899).

Nymphalis eupale, Doubleday, Westwood & Hew., *Gen. Diurn. Lep.* II. p. 310. n. 41 (1850) (S. Leone; Ashanti); Kirby, *Cat. Diurn. Lep.* p. 273. n. 56 (1871); Dewitz, *l.c.* XLI. 2. 2. p. 8 (1879) (Chinchoxo).

Charaxes eupalis (!), Smith, *Proc. Zool. Soc. Lond.* p. 472. n. 89 (1890) (Aruwimi).

♂. *Wings above*.—Forewing: greenish white area not reaching end of SM², mostly remaining well separated from outer margin.—Hindwing: submarginal black dots conspicuous, outer edge of wing brown.

Underside: ochraceous and white cell-bar of forewing becomes small or disappears when the other markings vanish.

♀. Like ♂ in colour, outer edge of greenish white area of forewing not more than 3 mm. from the end of the cell anteriorly.

Hab. Sierra Leone to Angola, the Congo, as far east as Unyoro, and (?) the northern parts of British East Africa. In the Tring Museum 40 ♂♂, 2 ♀♀ from: Sierra Leone; Accra; Warri, ii. '96 (Dr. Roth); Cameroons; Stanley Pool to Lukolele; Bopoto; Great Forest of Upper Congo, two and three days' march from Ft. Beni, 6 and 7 v. '99 (Dr. Ansorge); Naso, Chagwe, iii. '98 (Dr. Ansorge); Kasokwa, Unyoro, 5. x. '97 (Dr. Ansorge); Buai, Busiro, 24. iii. '99 (Dr. Ansorge); Port Alice, 5. iii. '97 (Dr. Ansorge); Bulluji, Unyoro, 7. vii. '97 (Dr. Ansorge).

b. *Ch. eupale dilutus* (Nov. Zool. VII. t. 7. f. 6. ♀).

Charaxes eupale, Butler, *Proc. Zool. Soc. Lond.* p. 720. n. 16 (1895) (Zomba).

Charaxes eupale dilutus Rothschild, *Nov. Zool.* V. p. 97. n. 3 (1898) (Zomba).

Charaxes eupale ab. dilutus, Aurivillius, *Kongl. Vet. Ak. Handl.* XXXI. 5. p. 245. sub n. 75 (1899) (Nyassaland).

♂. *Wings above*: greenish white area of forewing extending to end of SM²; black submarginal dots of hindwing mostly obliterated, no distinct olive brown border to hindwing. *Underside*: white bar of cell of forewing large, not disappearing even if the other markings are nearly all absent.

♀. Greenish white scaling of *upperside* of both wings more extended than in the ♀♀ of *Ch. eup. eupale*, the black submarginal dots of the hindwing smaller, upper ones obliterated. *Underside*: the ochraceous and white mark in the cell of the forewing large.

Hab. Nyassaland. In the Tring Museum 1 ♂, 2 ♀ from: Zomba, xii. '95 (Dr. Percy Rendall), Chipaika Estate near Bandawa (Watkinson).

f. Median and submedian bars of both wings close together, fused to a narrow band; this band occasionally indistinct in species with tail M² spatulate.

♂¹. Underside of forewing with two large, yellow, postdiscal patches.

88. *Charaxes nobilis* (Nov. Zool. VII. t. 7. f. 5. ♂).

Charaxes nobilis Druce, *Ent. Mo. Mag.* X. p. 13 (1873) (O. Calabar); Kirby, *Cat. Diurn. Lep.* p. 748. n. 75 (1877); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 371. n. 56 (1896) (O. Calabar); Auriv.,

Kongl. Sr. Vet. Ak. Handl. XXXI. 5. p. 240. n. 49 (1899) (O. Calabar; Barombi, Cameroons).

♀. *Charaxes agabo* Distant, *Proc. Zool. Soc. Lond.* p. 708. t. 54. f. 4 (1879) (Calabar).

♂♀. *Charaxes homerus* Staudinger, *Iris* IV. p. 132. t. 2 f. 1. ♂ (1891) (Barombi).

♂. *Body above* olivaceous black, abdomen cream colour, except first two tergites; four large and a small dot on head, a line behind eye, three dorsal and a lateral dot on prothorax, and two lateral dots on mesothorax, white.

Underside, palpi, middle of sterna, a broad oblique stripe on meso-, and a shorter and thinner one on metasternum, outside of middle and hinder tibiae, distal edges of tarsal segments, and the abdomen, white.

♂. *Wings, upper side*, black, olivaceous at base.—Forewing: outer margin deeply concave in middle, markings cream colour; a broad discal band, from R^3 to internal margin, 14 mm. wide behind, 5 to 8 in front, partition R^3-M^1 separated, the band continued by two spots SC^5-R^2 , the upper one very small, mostly represented only by some bluish white scales, the second about 8 mm. from outer margin, 4 to 5 mm. long; a postdiscal spot SC^4-SC^5 , occasionally vestigial, often followed by a second, smaller, postdiscal spot, a series of small, white, marginal dots, white scales restricted to fringe between SC^3 and SC^5 .—Hindwing: the greater part of the wing cream colour, basal black area only 4 to 5 mm. wide; black disco-marginal band with nearly straight proximal edge, of nearly even width (9 mm. at $SC^{(2)}$) from C to (SM^1), including two series of glaucous blue spots, submarginal spots more or less rounded, except upper one, second spot the largest, 2 by 3 mm., the admarginal spots transverse, divided or subdivided in sharply pointed triangular spots, upper ones generally absent, anal spot yellow; abdominal fold black beyond end of SM^3 , the black sealing including a white, triangular, subanal patch.

Underside: black bars very heavy, joined together, interspaces silvery white, some yellow, others pale blue.—Forewing: costal margin black, the bands joined to it, a streak at base white; cell-bars and bar D merged together, leaving three rather small interstitial, white, spots, sometimes there is a fourth, minute, spot near base; submedian and median bars $M^1-(SM^1)$ merged together isolating a white submedian streak behind basal partition of M and a triangular spot before base of M^2 , median bar R^3-M^1 merged together with the black cellular area, produced distad along M^1 , bar R^2-R^3 not separated from bar D, the cellule R^2-R^3 completely occupied by a black streak from cell to discal bar, median bars $SC^{4.5}-R^2$ 10 mm. from cell, forming a short, broad, band, which connects the streak R^2-R^3 with the costal border, median interspaces $SC^{4.5}-R^2$ white; discal bars all present, forming a continuous band which is nearly parallel to outer margin, and is joined along the veins to the black postdisco-marginal band; discal interspaces SC^4-R^2 white, not separated, discal interspace R^3-M^1 touching the next with its dilated distal portion, the following three patches wider than above, cream colour, extended to base at SM^2 ; postdiscal interspaces SC^4-M^1 white, upper three nearly contiguous, the following two widely isolated, interspaces M^1-SM^2 yellow, patch M^2-SM^2 measuring 5 by 7 mm.; submarginal interspaces represented by one or two white dots near apex of wing, and three pairs of obliquely placed, bluish white, linear spots M^1-SM^2 which are often joined to the white marginal dots, the latter rather larger than above.—Hindwing: basal and subbasal bars merged together to a black band of 3 mm. width, which is continuous with the three black lines upon veins (SM^1)— SM^3 , and with marginal line; submedian and median bars forming a band of 3 mm. width, crossing C 18 mm. from end of this vein joining line (SM^1) and being continuous with disco-postdiscal band, portion (SM^1)— SM^3 connecting the black abdominal lines and isolating a white triangular patch near anal angle; there are sometimes traces of white interspaces in the median band; postdiscal and discal bars forming a third band, which is $3\frac{1}{2}$ mm. broad between R^2 and R^3 , includes a series of thin, sometimes slightly curved, pale ochraceous, interstitial lines, the band crossing SC^2 5 mm. from end, slightly angled upon R^2 ; submarginal,

admarginal and marginal bars forming a fourth band, which is separated from the disco-postdiscal one by a series of submarginal interstices, upper six large, white, last two minute, bluish white, patch SC^2-R^1 the largest, measuring 3 to 4 mm. in width; admarginal interstitial dots triangular, bluish white, occasionally fused together to bars, spots M^2-SM^2 yellow, forming one bar which is dilated upon (SM^1); vein C_{1+2} 28 mm., (SM^1) 28 mm. long, M^2 from its base to tip of tail 23 mm., anal region less produced than in most *Charaxes*, the wing, therefore, less triangular; outer margin obtusely dentate, concave between tails, both tails slender, rather pointed, tail R^3 5 mm., tail M^2 4 mm. long.

♀. Unknown.

Length of forewing: ♂, 46—49 mm.

Clasper long, apex forming a hook, basal half of ventral margin thickened as in other species, but the upper edge of this part denticulated and, proximally of middle of clasper, produced into a heavier tooth which points distad, this armature similar to that of *Ch. fabius*; penis-funnel very broad and rounded; penis long, a series of dorso-lateral teeth about 3 mm. before end: tenth tergite deeply and triangularly sinuate, the two lobes into which it is divided pointed. Vein D^3 of hindwing joining M between M^1 and M^2 .

Hab. West Africa: Old Calabar; Cameroons; Congo. In the Tring Museum 2 ♂♂ from: N'doro, Upper Ogowé R., and the Kassai. One ♂ in the Museum in Bruxelles from Abou-Mombesi-mongalla, Congo.

¹. Underside of forewing with large, yellow, patches.

². Postdiscal interspaces of forewing above (or the greater part of the wing) white.

³. Hindwing above with a black postdisco-marginal band.

89. *Charaxes zoolina* (Nov. Zool. V. t. 9. f. 4—8. ♂♀).

Nymphalis zoolina Westwood, in Doubleday, Westw. & Hew., *Gen. Diurn. Lep. t. 50. f. 1. ♀* (1850) (*hab.?*); Trim., *Rhop. Afr. Austr. p. 178. n. 103. ♀ and p. 341. ♂* (1862-65) (Natal).

♂♀. *Body above* mummy brown, sides of thorax cinnamon in ♂, olive grey or whitish in ♀; four white dots on head, two white dots behind eye, often joined together to a half-ring, followed by a lateral dot on prothorax; *underside* white, streaks on sterna underneath legs, upperside of anterior tibia and four posterior femora mummy brown, abdomen clay colour in ♂, cinnamon brown in ♀, with whitish scales in mesial line and at edges of segments, sometimes unicolorous.

♂. *Wings above* white, with a slight yellow green tint, faintly opalescent in side-light; a broad disco-marginal band, which on forewing extends to base at costal margin, black.—Forewing: cell-bar 3 often present as a patch, the whole cell sometimes shaded over with brownish black scales, but generally the interspace between cell-bars 3 and 4, seldom the whole cell, white; cell-bar 4 and bar D merged together to a narrow band which is not separated from the black costal border, the band continued in many specimens to M^2 , sometimes to (SM^1); black outer area more or less dentate upon veins, 4 to 6 mm. broad at SM^2 , 9 to 11 mm. at R^3 , including two greenish white discal spots SC^5-R^2 , which are seldom absent, and a series of postdiscal spots which is parallel to margin, this series sometimes reduced to one dot between R^3 and M^1 , dot R^1-R^2 very seldom present; white discal area mostly bordered in front by R^2 , here $2\frac{1}{2}$ to 5 mm. wide, seldom with two

small, elongate, spots in front between SC^{4-5} and R^2 ; outer margin angled at SC^5 , more obtusely so at M^2 .—Hindwing: black disco-marginal border 5 to $7\frac{1}{2}$ mm. broad at SC^2 , 4 to 6 mm. at M^1 , its inner edge nearly straight, sometimes slightly convex anteriorly; within the band there are two postdiscal interstitial lunules M^1 — SM^2 , the upper olive buff, the second tawny or also more or less olive buff, sometimes produced at M^2 to outer margin, a series of minute, white, submarginal dots, posterior two or three often bluish, upper ones occasionally absent; admarginal interspaces transverse, thin, ochraceous or tawny, often dilated at veins, posterior ones often olive buff at edge, upper ones seldom marked, sometimes all absent except interspaces M^2 — SM^2 , an olive buff line in tail, often reduced; end of abdominal fold and (SM^1) more or less extended brown.

Underside greenish white, the bars forming mummy brown, sharply marked, bands.—Forewing: costal margin mummy brown, with a white streak at base; base of cell mummy brown, cell-bar 3 transverse, 1 to $1\frac{1}{2}$ mm. broad, a very little proximal of point of origin of M^2 , joined along M to the brown basal patch, cell-bar 4 close to cross-veins, forming together with bar D, median bars R^2 —(SM^1) and submedian bars M^1 —(SM^1) a band of 2 to $2\frac{1}{2}$ mm. width, which is slightly angled at lower angle of cell in many specimens, and shows generally more or less obvious white spots inside, which represent the median interspaces, white spot in upper angle of cell very seldom absent; median bars SC^4 — R^2 merged together to a short band which is joined behind R^2 to the rather broad discal band, the two bands together resembling the letter Y; discal band concave distally in middle, about 3 mm. broad at its widest point between veins, distally concave between veins, more or less black distally between R^3 and SM^2 ; postdiscal bars transverse, thin, but bars SC^3 — R^3 larger, often not separated from the discal band; marginal border about $1\frac{2}{3}$ mm. broad; vein R^2 generally brown between cell and discal band; discal interspaces SC^4 — R^1 also separated into spots by the brown veins; postdiscal interspaces half-moon-shaped, spot SC^4 — SC^5 thin, often obsolete, more proximal, the second ovate, the third shorter, fourth and fifth larger, often contiguous, the following ones smaller; submarginal interspaces transverse, thin, often nearly all obsolete, spots SC^3 — SC^5 larger, appearing as a prolongation of the postdiscal series of interstitial spots.—Hindwing: costal margin thinly bordered brown at base, vein PC bordered brown at both sides, this brown band extended to costal margin and posteriorly prolonged across base of cell to join a longitudinal streak which runs from the base along (SM^1) to the median band; the latter appears as a prolongation of the median band of forewing, is about 2 mm. broad, slightly concave behind distally, it crosses M just outside base of M^2 , there being mostly a white dot left in the fork formed by M and M^2 , it consists of the submedian and median bars which leave here and there a white interspace between themselves, at (SM^1) the band touches (or nearly) the discal bar and then turns at a sharp angle to the end of SM^3 , portion (SM^1)— SM^3 formed by the median bars only; discal bars thin, black, the series either straight, or distally concave between C and R^3 , bars C— R^3 placed in a brown band which is often alone present, while bars R^3 — SM^2 have brown scaling only between themselves at the veins, the white distal borders of the last bars very thin, while the borders have often developed to obvious transverse spots between SC^2 and R^3 ; postdiscal interspaces brown, posterior ones often yellowish, forming with the before-mentioned brown discal band one band in which are situated the discal and postdiscal black bars and the white borders of the discal bars; postdiscal black bars C— R^3 seldom faintly vestigial within the

brown band; submarginal black bars transverse, thin, posterior ones merged together with the postdiscal bars to black spots with white, or blue and white, centres, submarginal bars SC^2-R^3 brown, submarginal interspaces $C-R^3$ white, larger than the postdiscal ones, spots SC^2-R^2 the largest, often rectangular and contiguous; marginal line thin, brown in front, black behind; admarginal transverse interspaces clayish ochraceous, upper ones shaded with white; veins R^3 to SM^3 more or less brown; outer edge of wing dentate at R^3 , rounded in front but slightly sinuate between veins, concave behind, anal portion produced, anal angle very obtuse, tail obliquely spatulate.

♀. Larger than ♂, wings much broader; black markings reduced.—Forewing: costal margin brown, this brown scaling seldom penetrating into cell, but occasionally the basal half of cell covered over with brown scales; cell-bar 3 vestigial as a rule at SC , cell-bar 4 mostly merged together with bar D as in ♂, but sometimes reduced to a spot or absent; median bars $SC^{4,5}-R^2$ mostly contiguous with the brown costal border, but otherwise isolated, in some specimens, however, connected behind R^2 with the discal series of bars; discal interspaces SC^3-R^2 large, seldom divided into patches; discal bars R^2-SM^2 arched, often joined along veins to the black postdisco-marginal band, sometimes isolated, posterior ones not seldom obsolete, bar R^3-M^1 6 to 9 mm., bar M^2-SM^2 only 5 mm. from margin, bars SC^3-R^2 completely merged together to black outer area, but there remain from one to three postdiscal greenish white interstitial spots, spots SC^1-SC^5 and R^1-R^2 small, spot SC^5-R^1 larger and never absent; postdisco-marginal band $3\frac{1}{2}$ to 4 mm. broad between R^2 and R^3 , 2 mm. at (SM^1).—Hindwing: disco-marginal band concave in middle; white postdiscal interspaces R^1-SM^2 halfmoon-shaped, upper ones seldom absent, discal arched bars R^1-SM^2 mostly thin, occasionally obliterated; submarginal white interstitial spots $C-R^3$ much larger than in ♂, spots SC^2-R^2 often merged together, dots R^3-SM^2 minute, with blue scales distally, the series suddenly broken at R^2 , spots R^2-R^3 being obviously more distal than spots $C-R^2$; admarginal interspaces ochreous or ochraceous, often whitish at veins, upper ones separate, posterior ones more or less continuous, narrower between veins, the posterior submarginal black bars being distally more or less convex.

Underside similar to ♂, but the brown bands thinner, especially in disco-marginal area.—Forewing: discal brown band 7 mm. distant from outer margin between R^3 and M^1 , partition R^2-R^3 often produced basad to join the band of median bars SC^3-R^2 ; white postdiscal interspace R^3-M^1 $3\frac{2}{3}$ to 5 mm. wide, postdiscal interspaces nearly all contiguous, the veins between them not being brown except upper ones.—Hindwing: postdiscal and submarginal white interstitial spots SC^2-R^3 larger than in ♂, the brown bands correspondingly thinner; two spatulate tails, upper one shorter than second.

Length of forewing: ♂, 27–31 mm.

“ “ ♀, 32–38 mm.

Sexual organs of ♂ similar to those of *Ch. neanthes*.

Hab. East Africa from Natal to Abyssinia; Madagascar.

a. Ch. zoolina zoolina (Nov. Zool. V. t. 9. f. 4. 5. ♂ 6. ♀).

Charaxes spec. nov., Angas, *Kafirs Illustr.* t. 30. f. 7. ♀. and expl. (1849) (Mulazi R.).

Nymphalis zoolina Westwood, in Doubl., Westw. & Hew., *Gen. Diurn. Lep.* II. t. 53. f. 1. ♀ (1850);

Trim., *Rhop. Afr. Austr.* p. 178. n. 103. ♀. and p. 341. ♂ (1862-65) (Natal); Kirby, *Cat. Diurn.*

Lep. p. 273. n. 54 (1871); Gooch, *Entom.* XIV. p. 6 (1881) (Natal); Oberth., *Ann. Mus. Civ.*

Genova XVIII. p. 728. n. 62 (1883) (Shoa, Junne).

Charaxes zoolina, Butler, *Proc. Zool. Soc. Lond.* p. 638. n. 62 (1865) (Amazulu; Pt. Natal); Staud.,

Exot. Tagf. p. 171 (1886) (Natal; Del. Bay); Trim. & Bowk., *S. Afr. Butt.* I. p. 318. n. 103

(1887) (Caffraria; Natal); Trim., *Proc. Zool. Soc. Lond.* p. 38. n. 58 (1894) (Manica); Reb.

& Rogenb., in Baumaun, *Massailand* p. 322. n. 100 (1894) (Kisnani; Umbugwe); Butl., *Journ.*

Linn. Soc. Lond. XXV. p. 370. n. 53 (1896) (Mamboia; Nguru; Kilimandjaro; Victoria

Nyanza; Zambesi; Del. Bay; Natal; "Cameroons" *loc. err.!*); Sbarpe, *Proc. Zool. Soc.*

Lond. p. 533. n. 35 (1896) (Sheik Husein, Somaliland, IX.); Butl., *ibid.* p. 823. n. 15 (1896)

(Upp. Shiré R., III.); Holl., *Proc. U. St. Nat. Mus.* XVIII. p. 262 (1896) (Brit. E. Afr.);

Butl., *l.c.* p. 397. n. 9 (1898) (Brit. E. Afr.); Auriv., *Kongl. Se. Vet. Ak. Handl.* XXXI. 5.

p. 243. n. 64 (1899) (pt.; Caffraria; Natal; Del. Bay; Manica; Zambesi; Nyassaland; Mamboia;

N'Guru; Kisnani; Kilimandjaro; Mkaramo; Vict. Nyanza; Brit. E. Afr.; Abyssinia; *non*

Madagascar).

♂. Hindwing with a very short tooth at R³; on the *underside*, the submarginal, white, interstitial spots SC⁵—SM² of the forewing all transverse, spots SC⁵—R³ thinner than the following ones, or at least not wider, spot SC⁵—R¹ not rarely vestigial, black median bars SC⁴—R² and discal bars SC⁴—R³ not marked as obvious black spots; discal black bars SC²—R³ of hindwing absent.

Wings above mostly a little more yellowish than in the Madagascar race.—Forewing: black median band always prolonged beyond M¹, mostly extended to M², not rarely to (SM¹); cell sometimes all black, occasionally nearly all white; black disco-marginal area 8½ to 10 mm. broad behind R³, 5 to 7 mm. before SM²; discal interstitial spots SC^{4,5}—R² seldom absent, the first the larger; postdiscal dots variable in size and number, dot SC⁵—R¹ always present, while dot R³—M¹ is often absent.—Hindwing: median band marked as a rule by black scales; white submarginal dots very variable, often represented only by a few white scales.

Underside: bands rather paler brown than in *Ch. z. betsimiseraka*.—Forewing: white subapical interspace of cell as broad as, or narrower than median band; white postdiscal interstitial spots R²—M¹ obviously larger than the following ones, spot M²—SM² ½ to 1½ mm. broad, spot SC⁴—SC⁵ truncate or concave distally, smaller than postdiscal spot SC⁵—R¹.—Hindwing: submarginal white spot R³—M¹ much smaller than spot R²—R³, mostly reduced to a tiny bluish white dot; postdiscal white spots SC²—R² larger than submarginal white spot R³—M¹, while in *betsimiseraka* the reverse is the case; distance from point of origin of M² to end of tail 21 to 23 mm.

♀. Discal bars of forewing *above*, if not connected at veins with black border, thin, deeply concave, bar R³—M¹ 8 to 9 mm., and bar M²—SM² 5 mm. from outer margin; white postdiscal interspace R³—M¹ two or three times as wide as interspace M²—SM². On the *underside*, the upper discal bars of both wings not marked as black spots; postdiscal white interspaces of forewing decreasing in width from R³ to SM² as on *underside*; the brown discal band much more oblique from R³ to SM² than in *betsimiseraka*; submarginal white spot SC⁵—R¹ not wider than spots M²—SM²; submarginal white interstices SC²—R² of hindwing larger than in that race, the brown postdiscal bars SC²—R² not thicker than the respective white postdiscal spots, or thinner; length of M² from its base to tip of tail 23 to 27 mm.

Length of forewing : ♂, 27—30 mm.

 ♀, 32—36 mm.

Hab. Natal to Abyssinia. In the Tring Museum 16 ♂♂, 12 ♀♀ from : Natal, Delagoa Bay, Pembe and Rikatla. Germ. E. Afr. : Mikindani, Jan. to May. Brit. E. Afr. : Taveta, vi. ; Kibwezi, 7. iv. '94 ; Ndange, 1. iv. '95 ; Pt. Alice, Uganda, 6. vii. '94 (Dr. Ansorge). Somaliland : Sheik Hnsein, 5 to 7000 ft., 20. ix. '94, wet country (Dr. Donaldson Smith).

b. Ch. zoolina betsimiseraka (Nov. Zool. V. t. 9. f. 7. ♂. 8. ♀).

Charaxes betsimiseraka Lucas, *Ann. Sc. Nat.* (5). XV. n. 22. p. 2 (1872) (Madag.); Mab., in Grandid., *Hist. Madag. Lép.* I. p. 195. n. 9. t. 21. f. 2. 2a. ♂ (1885-87) (Mad. or.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 370. n. 54 (1896).

Charaxes relatus Butler, *Ann. Mag. N. H.* (5). V. p. 394. (1880) (Madag.); Mab., *l.c.* p. 196. n. 10. t. 21. f. 3. 3a. ♂ (1885-87); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 371. n. 55 (1896) (Ft. Dauphin).

Charaxes zoolina, Aurivillius, *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 243. n. 64 (1899) (pt.; Madag.).

Charaxes zoolina var. (ab.?) *relatus*, Aurivillius, *l.c.* (Madag.).

♂. Hindwing produced into a heavy tooth at R^3 ; the submarginal interstitial, white, spots of the *underside* of the forewing rounded, at least 1 mm. wide; black discal bars $C-R^3$ of hindwing well-marked within brown band.—*Wings above*; black band at end of cell not continued to M^2 , median bar M^1-M^2 seldom vestigial; postdiscal interstitial spots variable in size and number, dot R^3-M^1 is always the last to disappear; black disco-marginal band 7 mm. broad at M^1 , 5 to 6 mm. at SM^2 .—Hindwing: median band shining through from below, but not marked by brown scales.

Underside.—Forewing: black discal bars mostly all marked, median bars SC^4-R^2 also vestigial; white postdiscal spots R^3-SM^2 mostly about equal in width, but spot R^3-M^1 sometimes wider, spot M^2-SM^2 2 mm. wide; submarginal white spots all comparatively large, spots SC^5-R^3 larger than the following ones, at least 1 mm. broad, spot SC^4-SC^5 ovate, not concave distally, 3 mm. long.—Hindwing: series of black discal bars and their white outer borders straight or nearly so; submarginal interstitial white spots variable in size, spots SC^2-M^1 in a straight line, or spots R^2-M^1 a little more distal than spots SC^2-R^2 ; line on tail continuous with anal admarginal spots; distance from point of origin of M^2 to end of tail 24 to 25 mm.

♀. *Wings above*.—Forewing: cell-bar 4 absent; bar D thin; median bars SC^4-R^2 isolated; discal bar R^3-M^1 6 mm. from outer margin, about $1\frac{1}{2}$ mm. thick, continuous with the other discal bars, bar M^2-SM^2 vestigial, nearly 5 mm. from outer margin; postdiscal interspaces R^2-SM^2 merged together, the veins not being black; black postdisco-marginal band 3 mm. broad before R^3 , 2 mm. before SM^2 .—Hindwing: whitish postdiscal lunules SC^2-M^2 vestigial; admarginal interstitial, linear, spot SC^2-R^1 absent, spot R^1-R^2 thin.

Underside; black discal bars present on both wings.—Forewing: cell with a tiny white dot near base which almost separates cell-bar 2 from the brown basal scaling; cell-bar 4 separated from bar D by a white interspace which is as broad as the bars; postdiscal white interspaces R^3-SM^2 nearly equal in width, interspace R^3-M^1 a little wider than the others, measuring 4 mm.; submarginal interstitial spots R^1-SM^2 gradually decreasing in size, spot R^1-R^2 ovate.—Hindwing:

brown median band with obvious white spots ; white postdiscal interstitial spots C—R³ small, spot R²—R³ the largest ; white submarginal interstitial spots SC²—R² nearly 2 mm. broad, the brown postdiscal band separating them from the white postdiscal spots nearly of the same width behind SC² as those white submarginal spots ; distance from point of origin of M² to tip of tail 26 mm.

Length of forewing : ♂, 29—31 mm.

” ” ♀, 34—37 mm.

Hab. Madagascar. In the Tring Museum 13 ♂♂, 1 ♀, partly from Morondawa.

Aurivillius, *l.c.*, remarks correctly that Mabile's figure of "*relatus* Butler" is drawn from a mutilated specimen. The differences between *relatus* and *betsimiseraka* are individual ; there is no absolute constancy of markings in any species.

r³. Black scaling of hindwing above reduced to a very thin marginal line between C and R³.

90. *Charaxes kahldeni*.

Charaxes kahldeni Homeyer & Dewitz, *Berl. Ent. Zeitschr.* XXVI. p. 381. t. 7. f. 1. ♂. 2. ♀ (1882) (Angola) ; Butl., *Journ. Linn. Soc. Lond.* XXV. p. 370. n. 52 (1896) ; Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 253. n. 63 (1899) (Kamerun ; Angola).

♂ ♀. *Body above* olive grey, anterior part of thorax, and head, olive cinnamon, four white dots on head, white line behind eye very thin, or divided into two dots. *Underside* white, streaks on breast underneath legs brown, abdomen with clayish spots.

♂. *Wings upperside*, white with a slight greenish tint, somewhat opalescent in side-light.—Forewing : costal margin brown proximally, brownish black distally ; bar D marked in front ; median bar SC⁵—R¹ represented by a black spot, varying in size, sometimes absent, 4 to 5 mm. from cell, occasionally preceded by a tiny dot ; discal bars R²—SM² continuous, posterior ones seldom marked, often all obsolete ; bars SC³—R² completely merged together with the black postdisco-marginal band, there being in the black apical area thus formed only one postdiscal white spot of variable size, while white postdiscal interspaces R²—SM² are not, or not obviously, separated from one another, there is sometimes a second small white spot at the distal side of discal bar R¹—R² ; black postdisco-marginal band slightly concave between veins, 1½ mm. broad at (SM¹) ; outer margin angled or rounded at SC⁵.—Hindwing : no median and discal bars, but there is sometimes a trace of one discal bar at abdominal margin close to anal angle ; postdiscal bars M²—SM² joined to the submarginal ones to form small rings close to the margin with pale blue centres, postdiscal bar M¹—M² sometimes vestigial, while the submarginal bar M¹—M² is marked as a transverse line, in some specimens the submarginal bars SC²—M¹ are also present ; a thin black marginal line ; anal admarginal interspace ochreous, tail black with a thin bluish white line.

Underside white, slightly greenish, a little glossy in side-light ; markings mummy brown.—Forewing : costal margin, to which a dot in middle of cell is joined, a median band situated as in *zoolina*, but rather thinner behind, mostly including white dot anteriorly, a median spot SC⁵—R¹ joined to the costal streak, 3 to 4 mm. from cell, a discal continuous band curved costad in front, about 1½ mm. wide in middle, thinner behind, 5 mm. from outer margin at R¹ and

2½ mm. at SM², a series of very thin, often obsolete, postdiscal bars, close to marginal band, mmmmy brown; postdiscal interspaces not separated, submarginal ones thin, upper two enlarged, marginal band 1 to 1½ mm. broad.—Hindwing: bands nearly as in *zoolina*, vein M² outside the median band and veins M¹, SM², SM³ not streaked brown, no white spots in median band; discal band straight, postdiscal bars thin, straight, joined to the discal band at veins, thus isolating thin white or buffish postdiscal lunules; white admarginal interspaces SC²—R³ about as wide as, or wider than, disco-postdiscal band, spot R³—M¹ smaller, the others minute and pale blue or bluish white; submarginal bars SC²—R³ very thin, often obsolete, bars R³—SM² black, joined to the black postdiscal bars; upper admarginal interspaces white, interspaces R³—M² obsolete, or ochraceous, anal interspace ochraceous; outer margin very slightly sinuate between upper veins, concave between R³ and M², with a short tooth at R³, anal angle less obtuse than in *zoolina*, tail rather slenderer.

♀. Larger than ♂, wings broader; white postdiscal interspaces of forewing above and below, and submarginal interspaces of hindwing larger; with two tails as in ♀ *zoolina*.

Length of forewing: ♂, 28—32 mm.

„ „ ♀, 34 mm.

Sexual organs resembling those of *Ch. zoolina*.

Hab. Congo Basin to Cameroons. In the Tring Museum 11 ♂♂ from the Forest of the Upper Congo, three and four days' march from Ft. Beni, caught by Dr. Ansorge on the 7th and 8th of May, 1899; Leopoldville.

l². Postdiscal interspaces (or the greater part) of the forewing above ochraceous or ochreous.

s³. Hindwing below, along abdominal fold, with a brown streak which joins distally the median band.

91. *Charaxes homeyeri*.

Charaxes homeyeri Dewitz, *Berl. Ent. Zeitschr.* XXVI. p. 382. t. 7. f. 3. ♂ (1882) (Angola); *Butl., Journ. Linn. Soc. Lond.* XXV. p. 370. n. 51 (1896); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 243. n. 65 (1899) (Kamerun; Angola).

♂♀. Allied to *Ch. neanthes* and *zoolina*. Body above more or less white.—Wings above, basal half of forewing and three-fourths of hindwing white with a greenish yellow tint, nearly as in ♀ *Ch. neanthes betanimena*, then ochraceous to tawny.—Forewing: outer margin angled at SC⁵; disco-marginal area tawny; medio-discal area and costal margin ochraceous; median bars SC⁴—R³ and bar D absent; postdiscal interstitial spots SC⁵—SM² marked.—Hindwing: discal series of bars closer to margin than in *neanthes*, more regular, much less concave between SC² and R³, bar C—SC² absent.

Underside as in *neanthes*, paler in ♀ than in ♂, but median band forming a very obtuse angle at base of M², the angle pointing basad, and fused posteriorly with a brown streak of the width of the band situated upon (SM¹) and extending down to base; outer margin evenly rounded, no distinct tooth at R³, tail as in *neanthes*.

Length of forewing: ♂, ♀, 30 mm.

Hab. Northern Angola.

t³. No brown streak along (SM¹) of hindwing below.

s⁴. ♂, basal area of both wings white (♀ unknown).

92. *Charaxes ehmckei*.

Charaxes ehmckei Dewitz, *Berl. Ent. Zeitschr.* XXVI. p. 382. t. 7. f. 4. ♂ (1882); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 369. n. 50 (1896) (Angola); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 243. n. 66 (1899) (Angola).

♂. Allied to *Ch. neanthes*. Body above more or less white.—Wings above as in ♀ *Ch. neanthes betanimena*, the basal area being white, with a greenish yellow tint; costal margin and disc of forewing, and a broad discal border of white area of hindwing ochreous; disco-marginal area tawny.—Forewing: median bars SC⁴—R² merged together with the disco-marginal band as in *betanimena*; bar D and median bar R³—M¹ present, but not cell-bar 4; postdiscal ochraceous interstitial spots SC⁵—SM² all marked.—Hindwing: discal bars black, the same in position as in *Ch. neanthes neanthes*, but posterior bar a little more proximal (according to figure); submarginal spots C—R² obsolete.

Underside as in *neanthes neanthes*, median band vestigial on forewing, scarcely traceable on hindwing (individual character only?); hindwing more strongly angled at R³; tooth broad and truncate; tail M² as in *neanthes*.

♀. Unknown.

Length of forewing: ♂, 30 mm.

Hab. Pungo Andongo, Angola, May 25 (Berlin Museum).

t⁴. Basal area of both wings ochraceous or ochreous above in ♂ and ♀, or white in ♀.

93. *Charaxes neanthes*.

Nymphalis neanthes Hewitson, *Exot. Butt. I. Nymphalis* t. 1. f. 2. 3. ♀ (1854) (Natal).

♂ ♀. Body above tawny olive, thorax with a greyish tint, abdomen more tawny ochraceous, in ♀ sometimes whitish, palpi brown; four dots on head and a thin line behind eye cream colour. Underside tawny or tawny ochraceous, middle of sterna, legs, and in ♀ also abdomen more or less white.

♂. Wings above ochraceous, sometimes almost ochreous.—Forewing: outer margin deeply excavated between SC⁵ and M², angled at SC⁵; a postdisco-marginal band of about even width, varying in tint from seal brown to tawny ochraceous; preceded by a series of discal patches of the same colour, the series about 6 mm. from margin behind R³, almost parallel to it, the spots seldom reduced to blackish dots situated in pale tawny clouds, generally merged together to a band which is, moreover, joined along the veins to the postdisco-marginal band, thus isolating a series of rather small postdiscal interstitial spots of the ground-colour; median bars SC^{4,5}—R² triangular, their outer edge about 5 mm. from cell, often merged together to one patch which is joined to the disco-marginal area at costal margin and at R², sometimes also at R¹; in the latter case, the postdiscal interstitial ochraceous spots are reduced in size and number, spots R¹—R² and M¹—SM² being absent or only vestigial; no median bar R²—R³, but bars R³—M² sometimes vestigial; bar D present; cell-bar 4 often marked, parallel to bar D, about 1½ or 2 mm. distant from it, with the interspace more or less scaled tawny or brown; cell-bar 3 seldom marked as a dot.—Hindwing: a discal series of

blackish brown, halfmoon-shaped, bars, the series somewhat biconcave, bar SC^2-R^1 6 to 7 mm. from outer margin, being the most proximal; postdiscal bars broader, but less well-defined, tawny, bar $C-SC^2$ absent or merged together with the discal one, the next two transverse, the following ones more halfmoon-shaped, often very faint, joined at the veins to the submarginal bars; the latter deeper in tint, often blackish upon the internervular folds, especially last three or four, posterior ones mostly with minute, but obvious, white dots at proximal side; upper post-discal, submarginal, and admarginal interspaces sometimes obsolete, the brown scaling then forming a disco-marginal band; anal admarginal interspace greyish olive buff; basal half or two-thirds of abdominal fold creamy buff, cellule $C-SC^2$ often the same colour from base to discal bar; median bars sometimes faintly vestigial.

Underside varying from ochreous to chestnut tawny, sparsely or more densely shaded with black speckles; veins greenish.—Forewing: costal margin generally white at or near base, this character individually variable; cell-bar 3 indicated by two dots in many specimens, cell-bar 4 often vestigial, not rarely with white proximal border, forming together with bar D and the submedian and median bars $M^1-(SM^1)$ a band of 2 mm. width filled up with blackish scales, this band often scarcely traceable; median bar SC^4-R^1 about 4 mm. from cell, mostly absent, with a space at outside which bears fewer black speckles; discal bars represented by tiny black dots, the middle ones of which are often absent, the dots sometimes with white outer borders; some glossy grey scaling in marginal area, especially at apex.—Hindwing: a white dot before base of C, another at base of abdominal margin; no basal and subbasal bars; submedian and median bars forming a band as on forewing, the band bordered white proximally, slightly concave distally, crossing M^2 2 mm. from its base, then turning distad, sharply hooked at (SM^1) , portion $(SM^1)-SM^3$ standing at an acute angle to the main part of the band, the band often more or less obsolete, especially the proximal (submedian) part, sometimes reduced to some vestigials in the middle of wing; bar D in the band; discal bars represented by tiny spots, posterior ones arched, with thin white distal borders; postdiscal bars seldom vestigial; submarginal bars small, upper ones often obsolete, or mere dots, posterior ones transverse, with white dots at proximal side, sometimes obsolete; wing rather glossy, a large discal patch between R^2 and M^2 without gloss; outer margin rounded in front, concave between R^3 and M^2 , angled or toothed at R^3 , produced into a spatulate tail at M^2 ; anal angle very obtuse.

♀. *Wings above* paler than in most ♂♂, basal area whitish in Madagascar race, discal bars resp. patches of both wings more proximal than in ♂, more deeply concave.—Forewing: outer margin sharply angled at SC^5 ; median bars $SC^{4-5}-R^2$ smaller than in ♂, occasionally absent; discal bars often all isolated, sometimes reduced to dots, posterior ones not always marked, upper three often joined at veins to the postdisco-marginal band, which is anteriorly obviously broader than posteriorly.—Hindwing: discal bar SC^2-R^1 7 to 9 mm. from outer margin, the discal bars brownish black, often thin and separated.

Underside as in ♂, but paler; two spatulate tails, the first somewhat curved costad, the second rather longer, curved abdominad; postdiscal bars of forewing mostly vestigial.

Length of wing: ♂, 25—30 mm.

„ „ ♀, 30—34 mm.

Tenth tergite (δ) rounded, often sinuate; penis-funnel triangular, dorsal cavity not quite extended to the end, which is hooked; penis thin, with a minute tooth before the end; clasper narrowed at apex into a slender tooth which is gently curved mesiad.

Hab. East Africa from Natal to Abyssinia; Madagascar.

Individually very variable on upper- and underside; angle of forewing often rounded, sometimes very prominent and acute.

a. *Ch. neanthes neanthes.*

Nymphalis neanthes Hewitson, *Exot. Butt. I. Nymphalis* t. 1. f. 2. 3. ♀ (1854) (Natal); Trim., *Rhop. Afr. Austr.* p. 179. n. 104 (1862) (Natal); Kirby, *Cat. Diurn. Lep.* p. 273. n. 55 (1871); Gooch, *Entom. XIV.* p. 6 (1881) (Natal); Oberth., *Ann. Mus. Civ. Genova XVIII.* p. 728. n. 61 (1883) (Shoa; Jan., June, July, Nov.).

Charaxes neanthes, Butler, *Proc. Zool. Soc. Lond.* p. 638. n. 63 (1865) (Natal); Staud., *Exot. Tagf.* p. 171. t. 58 (1886) (Natal; Del. Bay); Trim. & Bowk., *S. Afr. Butt. I.* p. 320. n. 104 (1887) (Caffraria; Natal; Delagoa B.); Rogenh., in Baumann, *Usambara* p. 327. n. 86 (1891) (Usagara); Butl., *Proc. Zool. Soc. Lond.* p. 650. n. 25 (1893) (L. Mero); Reb. & Rogenh., in Baumann, *Massailand* p. 332. n. 98 (1894) (Serengeti); Holl., *Proc. U. St. Nat. Mus. XVII* p. 262 (1895) (Brit. E. A.); Butl., *Journ. Linn. Soc. Lond. XXV.* p. 369. n. 49 (1896) (Caffraria; Natal; Del. Bay; L. Mero); "Cameroons" *loc. err.!*); Sharpe, *Proc. Zool. Soc. Lond.* p. 533. n. 36 (1896) (Somaliland; Sheik Husein, IX); Butl., *ibid.* p. 397. n. 8 (1898) (Brit. E. Afr., March); Auriv., *Kongl. Sv. Vet. Ak. Handl. XXXI.* 5. p. 244. n. 68 (1899).

δ . *Wings above* ochraceous.—Forewing: bars and postdisco-marginal band varying individually from seal brown to tawny; in the darkest specimens median bars SC^{4-5} — R^2 joined together and to disco-marginal area, the discal bars larger, fused to a band which is partly separated from the postdisco-marginal band by rather small ochraceous interstitial spots, of which spot R^1 — R^2 and M^1 — SM^2 are sometimes absent, brown median band at end of cell prolonged to M^1 ; in the palest specimens the median patches SC^{4-5} — R^2 are isolated and the discal bars are also partly, the posterior ones totally, isolated.—Hindwing: postdiscal ochraceous interstitial spots SC^2 — M^1 well marked, upper submarginal interstitial dots also obvious, though small.

Underside ochraceous or tawny ochraceous, the black speckles rather prominent on the pale ground; the median band well marked, or vestigial, with all intergradations, the presence of the band apparently independent of the depth of the tone of the postdisco-marginal band of the *upperside*.—Hindwing: tooth at R^3 very short.

♀. *Wings above* ochraceous; discal bars luniform, thin, posterior ones of forewing separated, postdiscal ochraceous interspaces R^3 — M^2 of forewing wider than the postdisco-marginal band.—Hindwing: discal series considerably varying in size, sometimes very slightly concave in front, bar SC^2 — R^1 very little more proximal than bar C — SC^2 in some specimens.

Underside pale ochraceous, the median band mostly well marked, sometimes vestigial.

Hab. East Africa, from Natal to Abyssinia.

In the Tring Museum 28 ♂♂, 21 ♀♀ from: Natal: Estcourt, v. vi. Delagoa Bay; Zomba, xii. '95 (Dr. P. Rendall); Rikatla. German E. Afr.: Mikindani, i. to v. British E. Afr.: Mombasa; Taveta, vi. vii.; Kibwezi, 5. ii. '95 (Dr. Ansorge); Ndange, 1. iv. '95 (Ansorge); Mbinzan, 8. iv. '94 (Ansorge); Melindi. Somaliland: Sheik Husein, 30. ix. '94, wet country, 5 to 7000 ft. (Dr. Donaldson Smith). Abyssinia: Shoa, Shoatalit, 9. i. '80 (Antinori).

b. Ch. neanthes betanimena.

Charaxes betanimena Lucas, *Ann. Sc. Nat.* (5). XV. n. 22. p. 3 (1872) (Madag.); Mab., in Grandid., *Hist. Madag., Léop.* I. p. 198. n. 11. t. 23. f. 5. 6. ♂ (1885-87) (Madag. or.); Butl., *Journ. Linn. Soc. Lond.* XXV. p. 369. n. 48 (1896) (Ft. Dauphin); Auriv., *Kongl. Sv. Vet. Ak. Handl.* XXXI. 5. p. 242. n. 67 (1899) (Madag.).

Charaxes andriba Ward, *Ent. Mo. Mag.* IX. p. 216 (1873) (Madag.).

Charaxes freyi Branezik, *Jahresh. Ver. Trencs. Comit.* p. 161. t. 7. f. 8. ♀ (1891) (Nossibé).

Charaxes betanimena ab. audriba, Aurivillius, *l.c.*

♂. Thorax above more olive than in the continental form.—Wings above ochraceous ochreous with a gallstone yellow tint, veins pale green (if denuded).—Forewing: median bars SC⁴—R² and discal bars completely merged together with the postdisco-marginal band as in the darkest specimens of *n. neanthes*; colour of this outer area varying from seal brown to tawny chestnut; bar D present, but cell-bar 4 often absent in dark as well as in pale specimens, bars R³—M² seldom vestigial; number of postdiscal interstitial spots variable; angle at SC⁵ acute or obtuse, sometimes rounded.—Hindwing: postdiscal and submarginal interspaces C—R³ more or less shaded over with seal brown or tawny, hence the spots less distinct, obliterated in the dark specimen.

Underside chestnut tawny, band very conspicuous or vestigial, with intergradations; median bars SC⁵—R² often vestigial, with white proximal border; tooth R³ of hindwing mostly longer than in *n. neanthes*, anal area more produced between M² and SM², hence wing more triangular; tail longer.

♀. Body above paler than in ♂, posterior part of mesonotum, the metanotum and abdomen white. Wings above, basal area white; discal bars of both wings heavy, continuous; submarginal interstitial spots of hindwing obsolete.

Underside nearly as in *n. neanthes*, discal dots of forewing and postdiscal vestigial bars more obvious.

Hab. Madagascar. In the Tring Museum 7 ♂♂, 1 ♀.